



U.S. Department
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**National Highway
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Washington, D.C. 20590

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*** *** ***



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TRANSPORTATION SCIENCES CENTER
ACCIDENT RESEARCH GROUP

Division of Arvin/Calspan
[REDACTED] New York [REDACTED]

CALSPAN ON-SITE NON-DEPLOYMENT AIR BAG INVESTIGATION
CALSPAN CASE NO. 92-20
LOCATION - [REDACTED] ME
ACCIDENT DATE - [REDACTED] 1992

Contract No. DTNH22-87-C-27169

Prepared for:

U.S. Department of Transportation
National Highway Traffic Safety Administration
Washington, D.C. 20590

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points are coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 92-20	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Calspan On-Site Air Bag Non-Deployment Investigation Vehicle - Police 1992 Chevrolet Caprice Location [REDACTED] ME		5. Report Date: [REDACTED] 1993	
		6. Performing Organization Code	
7. Author(s) Accident Research Group		8. Performing Organization Report No.	
9. Performing Organization Name and Address Transportation Sciences Center Accident Research Group Division of Arvin/Calspan [REDACTED]		10. [REDACTED]	
		11. Contract or Grant No. DTNH22-87-C-27169	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Washington, D.C. 20590		13. Type of Report and Period Covered Technical Report Crash Date [REDACTED] 1992	
		14. Sponsoring Agency Code	
15. Supplementary Notes On-site investigation of a single crash that involved a police 1992 Chevrolet Caprice equipped with a Supplemental Inflatable Restraint (SIR) system.			
16. Abstract This on-site investigation focused on a low-speed crash that involved a police 1992 Chevrolet Caprice that was equipped with a Supplemental Inflatable Restraint (SIR) system which consisted of a driver's side air bag. The vehicle impacted a wooden utility pole with the right frontal area that resulted in 28.4 cm (11.2") of bumper crush. The damage and trajectory mode of the CRASHPC program was utilized to compute an impact speed of 23 KPH (14 mph) and a total (longitudinal) velocity change of 21 KPH (13 mph). The velocity change was below the manufacturer-reported 24 KPH (15 mph) centerline pole impact deployment threshold for this vehicle and therefore, the driver air bag system did not deploy. The driver of the vehicle was a 50 year old on-duty police officer. He was wearing a bulletproof vest; however, he was not wearing the manual 3-point lap and shoulder belt system. At impact, he initiated a forward trajectory and loaded the steering assembly with his thoracic area. His loading force compressed the energy absorbing steering column 2.4 cm (1") and deformed the upper steering wheel rim .6 cm (0.3"). The driver sustained a small laceration of the left face (AIS-1) and an abrasion of the dorsal aspect of the right wrist (AIS-1). His loading force against the steering wheel compressed his upper abdominal and thoracic area which produced brief traumatic apnea. He was subsequently transported by a police vehicle to a local hospital where he was examined for injury and released.			
17. Key Words Supplemental Inflatable Restraint (SIR) Right frontal impact ΔV of 21 KPH (13 mph) Non-deployment		18. Distribution Statement General Public	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 90	22. Price

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CALSPAN ON-SITE NON-DEPLOYMENT AIR BAG INVESTIGATION
CALSPAN CASE NO. 92-20
VEHICLE - POLICE 1992 CHEVROLET CAPRICE
LOCATION - [REDACTED] ME

SUMMARY

The single vehicle crash occurred on a two-lane urban street in the Village of [REDACTED] Maine on [REDACTED], [REDACTED], 1992 during daylight hours. The dry, asphalt road surface was straight and level with a 40 KPH (25 mph) speed limit. The involved vehicle was a marked police 1992 Chevrolet Caprice (VIN [REDACTED]) that was equipped with a Supplemental Inflatable Restraint (SIR) system which consisted of a driver's side air bag with manual B-pillar mounted 3-point lap and shoulder belts. At the time of the crash, the vehicle had an odometer reading of 33,450 km (20,776.4 miles).

The vehicle was driven by a 50 year old male police officer with a height of 175.3 cm (69 in.) and weight of 76.5 kg (170 lbs.). He was not wearing the manual 3-point lap and shoulder belt system. The officer was exiting the police station parking lot to begin routine patrol in his assigned area. As he approached the two-lane north/south roadway, he initiated a right turn onto the northbound travel lane. During the turning maneuver, his portable radio and a clipboard had fallen between the front seat cushions and against the emergency light switch panel. The officer reached for these items with his right hand and momentarily diverted his attention from the driving task. As a result of his reaching action, his left hand turned the steering wheel in a clockwise direction which caused the vehicle to drift to the right and departed the roadedge.

The right front bumper area of the Chevrolet Caprice impacted a 25.4 cm (10") diameter wooden utility pole that was located 0.4 m (1'4") outboard of the right roadedge. The officer estimated his impact speed at 15-20 mph. The 12 o'clock direction of force impact produced a maximum of 28.4 cm (11.2") of bumper crush located 41.7 cm (16.4") right of center. Direct contact damage began 23.9 cm (9.4") right of center and extended 31.8 cm (12.5") to the vehicle's right. The combined induced and direct contact damage was 164.5 cm (64.75") which involved the entire width of the front bumper. Crush values at bumper level were as follows: $c_1=2.3$ cm (.9"), $c_2=6.1$ cm (2.4"), $c_3=12.4$ cm (4.9"), $c_4=20.1$ cm (7.9"), $c_5=20.1$ cm (7.9"), $c_6=6.1$ cm (3.0"). Damaged components included the front bumper facia, bumper reinforcement bar, grille, right headlamp assembly, radiator support panel, and the hood. The preliminary repair estimate was \$3,522.57.

SUMMARY (CONT'D.)

The trajectory mode of the CRASHPC program was used to compute velocity estimates for the Chevrolet Caprice. Based on the crush data and impact and final rest positions, the Caprice impacted the pole at a CRASHPC generated speed of 23 KPH (14 mph) and underwent a velocity change of 21 KPH (13 mph). The impact did not fracture the wooden utility pole, however, its base was displaced 7 cm (2.75 in.). The SIR system had a manufacturer-reported centerline pole impact deployment threshold of 24 kph (15 mph) therefore, the vehicle did not sustain a sufficient longitudinal deceleration that is required to deploy the driver's air bag system.

The unrestrained driver of the vehicle was slightly out of position to his right at impact. He was wearing a bullet proof vest which consisted of 14 layers of Kevlar. The driver responded to the frontal impact force and loaded the steering assembly with his upper abdominal and thoracic areas. His loading force compressed the energy absorbing steering column 2.5 cm (1") and deformed the upper rim .6 cm (.25") forward. The vest distributed the loading force over a larger body area which reduced the probability of injury. As a result of the steering wheel loading, the driver sustained brief traumatic apnea (loss of breath) and that no visible injury occurred. He did sustain a superficial laceration of the left face from a pen that was displaced from his left shirt pocket. He also sustained an abrasion of the dorsal aspect of the right wrist from contact with the center mounted police radio equipment. There was no evidence of contact to the radio equipment. As a precautionary measure, the driver was transported to a local hospital by another police unit where he was examined for injury and released.

The [REDACTED] of [REDACTED] of the [REDACTED] Department was concerned that the air bag system did not deploy as a result of the frontal crash. Prior to our inspection, the body shop had removed the battery from the vehicle. The Chief stated that the air bag indicator lamp has flashed a normal sequence each time the vehicle was started prior to the crash. After the crash, the indicator lamp flashed in the same sequence for a 6-8 second period, then went out and stayed out indicating a normal operating system.

A local diagnostic technician was available to test the SIR system. He used an electronic, hand-held test unit, an OTC Monitor 4000E with a Domestic Pathfinder Software package for 79-92 GM, Ford, and Chrysler products. The diagnostic test did not detect any current or long term fault codes in the "history" mode of the SIR's diagnostics (DERM).

SUMMARY (CONT'D.)

Based on the CRASHPC generated velocity change and the diagnostic test of the SIR, we concluded that the vehicle did not sustain a sufficient deceleration that was required to deploy the SIR system.

During our on-site investigation of this non-deployment crash, the Chief of Police identified a survey that was being conducted by the City of ██████████ CA., regarding non-deployment crashes of similar '91-'92 Chevrolet Caprices. The Santa Ana Police Department had two '91 Caprices involved in frontal crashes in which the air bags failed to deploy. One of the vehicles sustained moderate frontal damage as a result of a pole impact which produced approximately 50.8 cm (20") of bumper crush. The second vehicle sustained less severe damage from a vehicle-to-vehicle crash.

The city's fleet manager contacted the regional office of the Chevrolet Motor Division and reported the non-deployment crash. The regional fleet service manager responded to the complaint and inspected the involved vehicles and tested the SIR's diagnostic systems. His inspection concluded that the SIRs were functioning properly before, during, and after the crashes and that the vehicles did not sustain a deceleration of sufficient magnitude to deploy the SIR.

A copy of the fleet service manager's letter to the City of ██████████ is included as Appendix F of this report. Also included with this appendix is a photograph of the vehicle involved in the pole crash and the teletype message that was sent to all police agencies by the ██████████ Police Department.

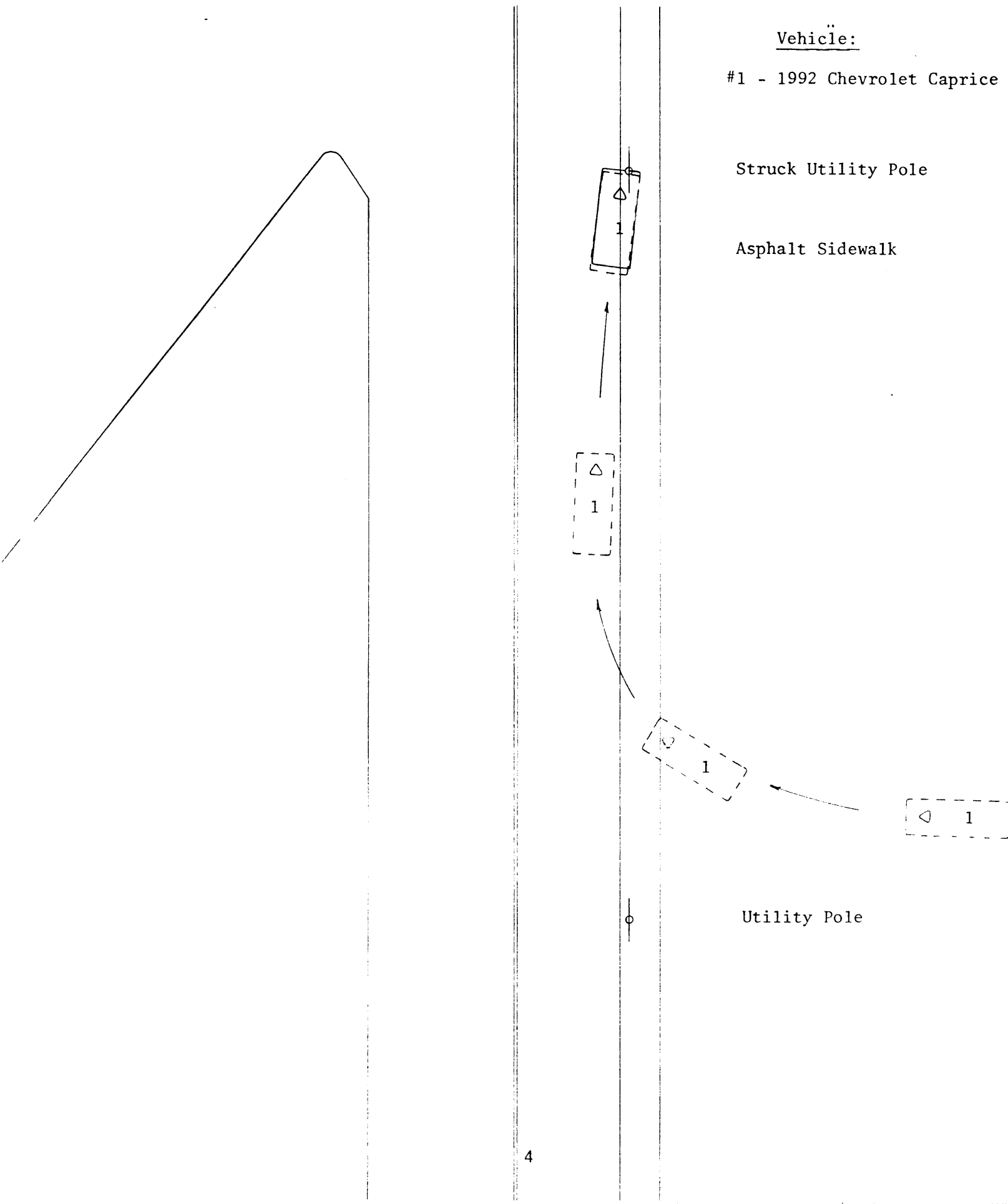
Accident Schematic
Calspan Case No.92-20

Vehicle:

#1 - 1992 Chevrolet Caprice

Struck Utility Pole

Asphalt Sidewalk



CALSPAN ON-SITE NON-DEPLOYMENT AIR BAG INVESTIGATION
CALSPAN CASE NO. 92-20
VEHICLE - POLICE 1992 CHEVROLET CAPRICE
LOCATION - [REDACTED] ME

CRASH DATA

Location: Urban two-lane village street
City/Township: [REDACTED], ME
Area/Type: Urban/Commercial
Accident Date/Time: [REDACTED] 1992,
daylight hours
Investigating Police Agency: [REDACTED] State Police
Accident Type: Car/Utility pole, right frontal
impact
Air Bag Vehicle Driver Injury Severity: Minor (AIS-1)

AMBIENCE

Viewing Conditions: Daylight
Weather: Overcast
Precipitation: None
Road Surface: Dry

HIGHWAY

Type: Village street
Number of Lanes: 2
Width: 12.6m (41'6")
Surface: Asphalt
Median: None


HIGHWAY (CONT'D.)

Edge:	West edge - 15cm (6") barrier curb
	East edge - Asphalt parking lot
Vertical Alignment:	Level
Horizontal Alignment:	Straight
Estimated Coefficient of Friction:	.75
Traffic Density:	No other traffic

TRAFFIC CONTROLS

Signals:	None
Signs:	None
Markings:	Double yellow centerlines
Speed Limit:	40 KPH (25 mph)

VEHICLE

Description:	1992 Chevrolet Caprice, 4 dr. sedan with police package (marked unit)
V.I.N.:	1G1BL537XNW (production number deleted)
Date of Manufacture:	 1992
Color:	Blue
Odometer:	33,450 km (20,776.4 miles)
Engine:	8 cylinder, 5.7 liter
Transmission:	4-speed automatic overdrive
Steering:	Power with tilt column
Brakes:	Power-assisted front disc, rear drum with anti-lock

VEHICLE (CONT'D.)

Padding:	Upper and mid instrument panel, soft edged steering wheel rim and air bag module assembly, headliner, sunvisors, door panels, door armrests, adjustable head restraints
Manual Restraints:	3-point lap and shoulder belts in the four outboard seated positions, center rear lap belt
Automatic Restraints:	Supplemental Inflatable Restraint (SIR) system which consisted of a driver's side air bag. The system did not deploy as a result of the 21 KPH (13 mph) ΔV frontal impact sequence
Defects:	None
Tow Status:	Towed due to vehicle damage

VEHICLE DAMAGE

Exterior: The right frontal area of the 1992 Chevrolet Caprice impacted a 26.7cm (10.5") diameter wooden utility pole that was located 0.4m (1.3') outboard of the right roadedge. Direct contact damage began on the front bumper fascia 23.9cm (9.4") right of center and extended 31.8cm (12.5") to the right. The contact damage extended vertically onto the headlamp lens, grille and hood face. The 12 o'clock direction of force impact crushed the bumper reinforcement bar to a maximum depth of 28.4cm (11.2"), located 41.7cm (16.4") right of center. As a result of the impact with the narrow object, the entire width of the bumper was displaced. The combined induced and direct contact damage length was 164.5cm (64.75"). Crush values at bumper level were as follows:

$C_1 = 2.3\text{cm (0.9")}$, $C_2 = 6.1\text{cm (2.4")}$,
 $C_3 = 23.4\text{cm (4.9")}$, $C_4 = 20.1\text{cm (7.9")}$,
 $C_5 = 20.1\text{cm (7.9")}$, $C_6 = 7.6\text{cm (3.0")}$.

VEHICLE DAMAGE (CONT'D.)

E x t e r i o r (cont'd.):

The utility pole impact buckled the upper rail of the radiator support panel and displaced the right frame rail which resulted in a 1cm (0.4") reduction of the right wheelbase. Damaged components included the front bumper facia, bumper reinforcement bar, both front bumper energy absorbing devices (EADs), right frame rail, right headlamp assembly, grille, radiator support panel, and the hood. The radiator, air conditioning condensor and the battery, all located directly rearward of the pole impact damage, were not damaged by the crash.

CDC:

Object Struck

Event Number

Utility Pole 12-FZEW-1 1

Repair Cost:

\$3522.57 inclusive of right front discriminating sensor

Interior:

The interior of the Chevrolet Caprice sustained minor damage that was associated solely with occupant contact. The unrestrained driver initiated a forward trajectory in response to the 12 o'clock impact force and loaded the steering wheel rim and air bag module assembly. His loading force minimally displaced the upper steering wheel rim 0.6cm (.25") forward and compressed the energy absorbing steering column 2.5cm (1"). Prior to our inspection, the body shop disassembled the knee bolster and the shear capsules (blocks removed) to inspect the column for damage. There was no damage to the bolster assembly.

SUPPLEMENTAL INFLATABLE RESTRAINT SYSTEM

The [REDACTED] Police 1992 Chevrolet Caprice patrol vehicle was equipped with a General Motors Supplemental Inflatable Restraint (SIR) system that consisted of a driver's side air bag. The system did not deploy as a result of the vehicle's frontal impact sequence with a utility pole that yielded a CRASHPC generated velocity change of 20.4 KPH (12.7 mph). The velocity change was below the required deployment threshold of 22.5-24 KPH (14-15 mph).

The SIR system consisted of two discriminating (crash) sensors, a secondary arming (safety) sensor, a diagnostic unit with an indicator lamp, the steering wheel mounted air bag module assembly, and a knee bolster. The discriminating sensors were mounted to the radiator support panel and were located behind the opening for the headlamps. The discriminating sensors are calibrated to close with velocity changes that are severe enough to warrant deployment of the SIR. The arming sensor was mounted under the instrument panel, adjacent to the steering column. This sensor is a protective switch that closes at a lower velocity change than the discriminating sensors. Closure of either discriminating sensor and the arming sensor is required to deploy the SIR.

The system is monitored by a diagnostic energy reserve module (DERM) that is mounted under the instrument panel, left of the steering column. If the DERM detects a fault within the SIR system, it will flash a code through the indicator lamp that is mounted in the instrument cluster. Existing codes can also be read by a hand-held diagnostic computer. Prior codes stored in the history memory can only be read and cleared by using the diagnostic computer.

The SIR indicator lamp in the crash involved Chevrolet Caprice did not flash a fault code following the crash. The lamp reportedly flashed for a 6-8 second period then went out and stayed out when the ignition key was placed in the run position. This sequence indicates that the system is armed and operational. Prior to our inspection of the vehicle, the body shop had removed the battery from the vehicle to check for underlying damage. During our inspection process, the battery was reinstalled in the vehicle and the DERM was tested using the indicator lamp. With the ignition switch placed in the run position, the lamp flashed 7-9 times then went out and stayed out. This sequence indicates a normally operating system.

SUPPLEMENTAL INFLATABLE RESTRAINT SYSTEM (CONT'D.)

A local diagnostic technician was available to test the DERM with a hand-held diagnostic computer, an OTC Monitor 4000E with a Domestic Pathfinder Software cartridge for 79-92 GM, Ford, and Chrysler products. The computer did not detect any current or long term faults in the listing mode of the DERM. The technician then disconnected the male/female connector for the right front discriminating sensor. At key, the indicator lamp flowed and stayed on indicating a fault. Using the OTC Monitor, the computer detected a fault code 35 which identifies that a discriminating sensor is open. This test was performed to verify proper operation of the derm. The connector was reattached and the system returned to its proper operating mode.

Based on the computed velocity change and the test of the DERM, we concluded that this vehicle's SIR system was operating properly at the time of the crash and that the vehicle did not sustain a sufficient deceleration that is required for deployment.

VEHICLE VELOCITY CHANGES

Travel Speed:	24-32 KPH	(15-20 mph)	Driver estimates
Impact Speed:	23 KPH	(14 mph)	
Total ΔV :	21 KPH	(13 mph)	
Longitudinal ΔV :	-21 KPH	(-13 mph)	
Lateral ΔV :	0.0 KPH	(0.0 mph)	

Energy absorption: 33,609 joules (24,786 ft. lbs.)

The impact speed and velocity changes were computed by the damage and trajectory algorithm of the CRASHPC program.

COLLISION SEQUENCE

Pre-Crash: The driver of the 1992 Chevrolet Caprice was an on-duty police officer for the [REDACTED] Police [REDACTED]. He entered the involved patrol vehicle in the parking lot of the police station and drove approximately 91m (300') in a westerly direction across the stone parking lot. As he approached the two lane roadway, the driver initiated a right turn to proceed in a northbound direction. During the turning maneuver, the driver stated that his clipboard and portable radio had fallen between the front seat cushions against the emergency light switch panel. The driver reached for the fallen items and momentarily diverted his attention from his driving task. As he reached with his right hand, his

COLLISION SEQUENCE (CONT'D.)

left hand probably turned the steering wheel in a clockwise direction which caused the vehicle to drift toward the right edge of the roadway. The driver redirected his attention forward and observed the vehicle was traveling on a trajectory toward a wooden utility pole. He braked immediately prior to impact in an attempt to avoid the impending crash

Crash:

The right frontal area of the Chevrolet Caprice impacted a 26.7cm (10.5") diameter wooden utility pole that was located 0.4m (1.3') outboard of the right roadedge. Impact speed was computed by the damage and trajectory algorithm of the CRASHPC program at 23 KPH (14.3 mph). The vehicle impacted the pole in a tracking mode which resulted in a 12 o'clock impact force. The impact crushed the front bumper to a maximum depth of 28.4cm (11.2") and displaced the base of the pole 7cm (2.75"). The pole subsequently rebounded to its original pre-crash position and was not damaged. The CRASHPC program computed a velocity change of 21 KPH (13 mph) that was below the threshold required for air bag deployment.

Post-Crash: Final Rest - The Caprice came to rest against the struck utility pole facing in a northerly direction.

Driver Activities - The driver of the Caprice used his police radio to notify his dispatcher of the crash. He exited the vehicle and waited for an officer to arrive on-scene.

Police Activities - The dispatcher notified an off-duty member of the [REDACTED] Police Department of the crash. He responded to the crash scene and while en route, requested that the dispatcher notify the State Police. It was police policy to have the State Police investigate all crashes that involved departmental vehicles.

The [REDACTED] arrived on-scene and initiated his investigation. The off-duty [REDACTED] police officer arrived on-scene and checked the condition of the driver. He subsequently transported the driver to a local hospital where he was examined and released.

Rescue Activities - Not required.

Scene Clearance - Following the police investigation, a local tow agency removed the vehicle from the scene.

HUMAN FACTORS/OCCUPANT DATA

Driver:	50 year old male
Height:	175.3cm (69")
Weight:	76.5kg (170 lbs.)
Occupant:	Police Officer
Manual Restraint System Usage:	None
Usage Source:	Driver interview, vehicle inspection, police report
Eyewear:	None
Vehicle Familiarity:	3 months
Route Familiarity:	Daily
Trip Plan:	Routine patrol
Manner of Leaving Scene:	Police vehicle
Type of Medical Treatment:	Examined at a local hospital and released

DRIVER INJURIES

<u>Injury</u>	<u>Severity (OIC/AIS)</u>	<u>Source</u>
Superficial laceration the left face	Minor (FLLI-1)	Displaced pen from of left shirt pocket that resulted from steering wheel contact
Abrasion of the dorsal aspect of the right wrist	Minor (WRAI-1)	Center mounted police radio equipment
Brief traumatic apnea	Not an injury	Steering wheel loading

DRIVER KINEMATICS

The driver of the 1992 Chevrolet Caprice was slightly out of position to his right at impact. He attempted to retrieve objects that had fallen between the front seats and against the emergency light switch panel. The driver had the seat adjusted to a mid track position and the tilt steering wheel set to a center position. He was not wearing the manual 3-point lap and shoulder belt system, however, he was wearing a bullet proof vest which consisted of 14 layers of Kevlar under his police uniform.

The driver responded to the 12 o'clock impact force by initiating a forward trajectory. His right hand and wrist area contacted the center mounted police radio units which resulted in an abrasion to the dorsal aspect of the right wrist. There was no damage or visible contact evidence to the radio units. His thoracic and upper abdominal areas loaded the steering wheel rim and the non-deployed air bag module assembly. The driver's loading force compressed the energy absorbing steering column 2.5cm (1") and deformed the upper rim approximately 0.6cm (.25"). His loading force against the steering assembly was partially absorbed and distributed by the Kevlar vest. He did, however, sustain compression of the upper abdominal area which resulted in brief traumatic apnea (loss of breath). The thoracic loading displaced a pen from the driver's left shirt pocket. As the pen was displaced, his head probably rotated downward and contacted the pen which produced a superficial laceration of his left face.

The driver rebounded from his forward trajectory and came to rest in the left front seat. Within seconds of the crash, the driver regained a normal breathing rhythm and reported the crash using his police radio.

SELECTED PRINTS



Origin of vehicle's trajectory



Vehicle's approach to the roadway



Driver initiates a right turn onto roadway



Struck utility pole



7cm (2.75") displacement of pole



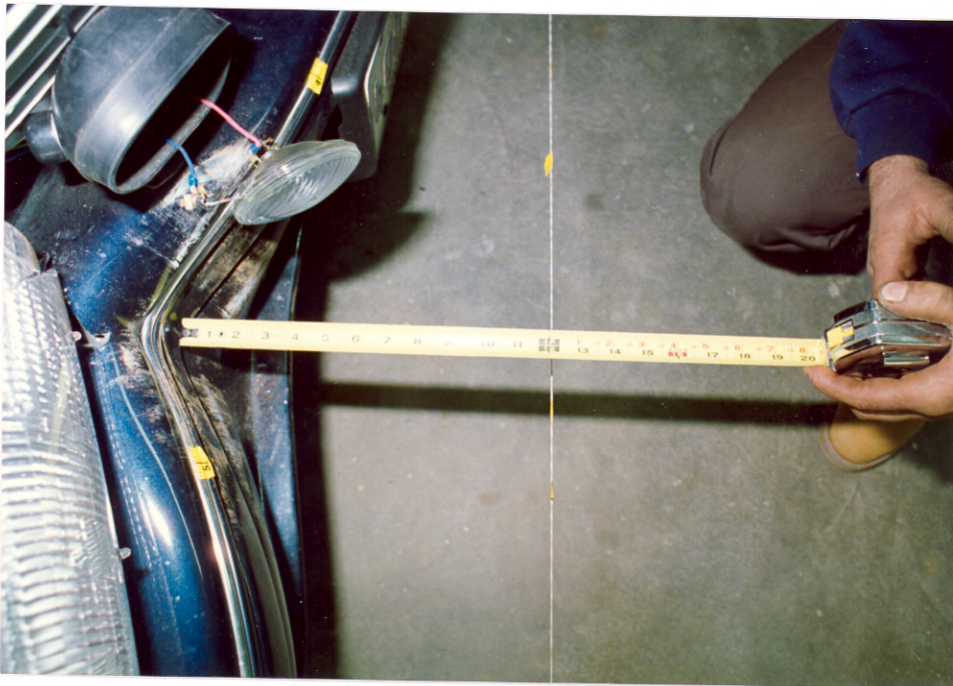
Lookback view of vehicle's trajectory



Frontal view of the Chevrolet Caprice



Close-up view of the utility pole impact damage



Overhead view showing the extent of crush



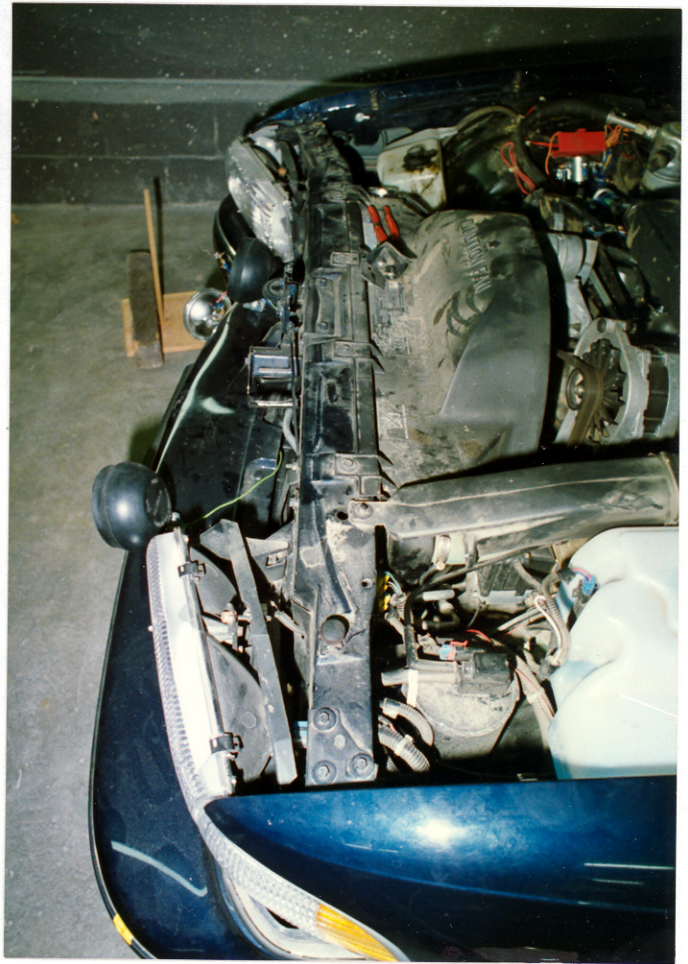
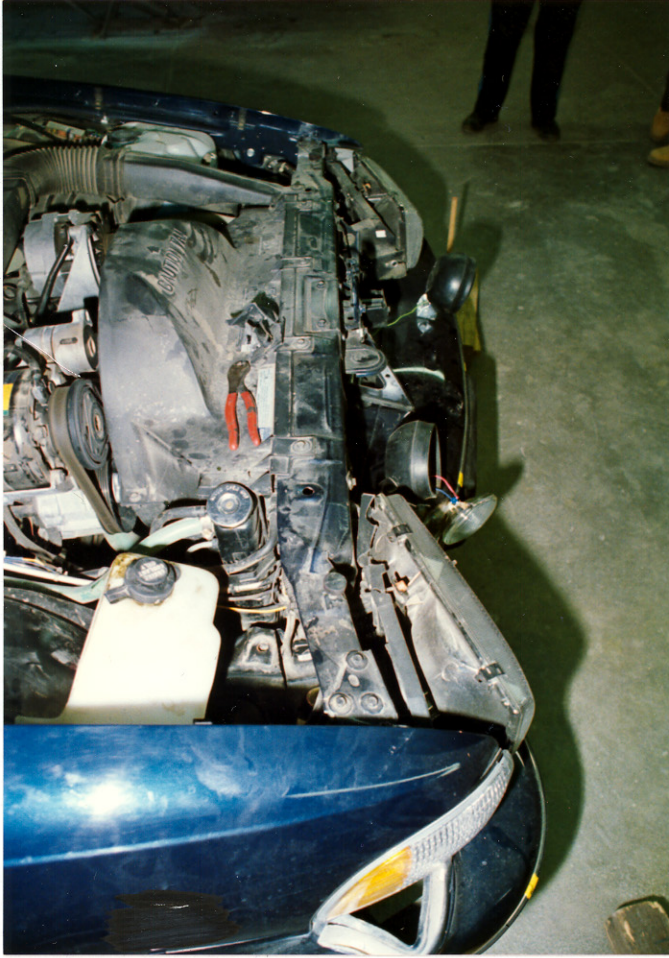
Front three-quarter views



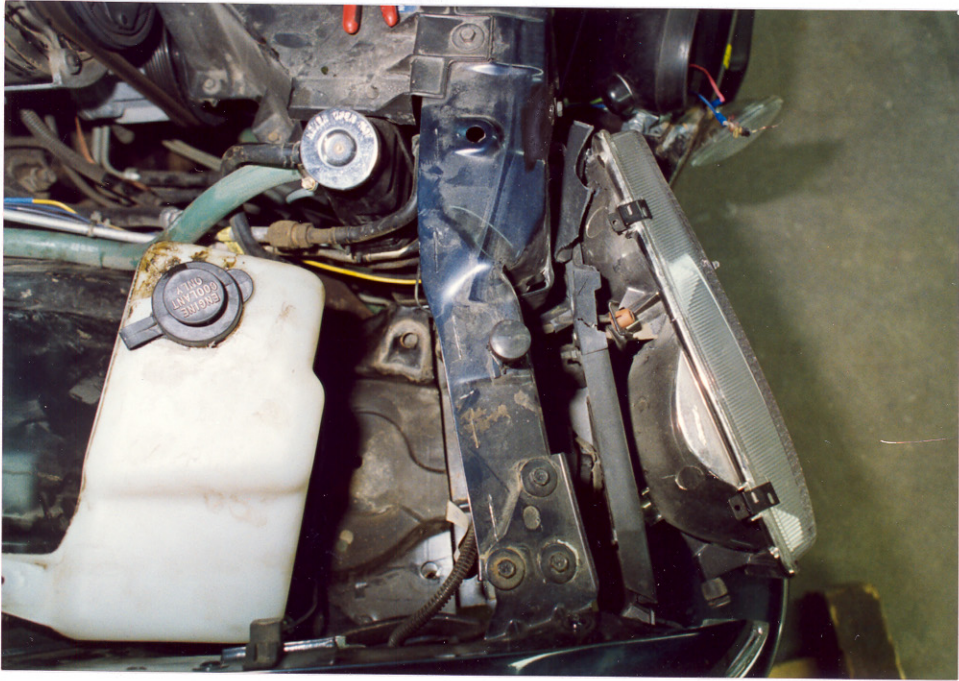
Perpendicular views showing the extent of crush



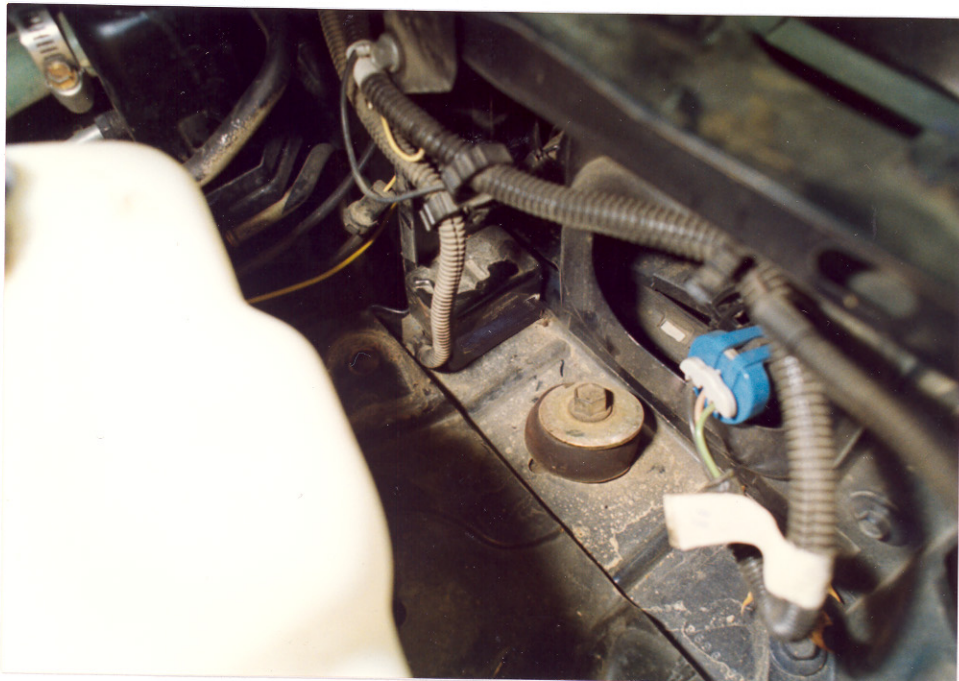
Profiles of a similar undamaged vehicle



Damaged radiator support panel of the involved Chevrolet Caprice



Area surrounding the right front air bag discriminating sensor



Right front discriminating sensor



Overall view of the driver's seated position and the non-deployed
air bag module assembly



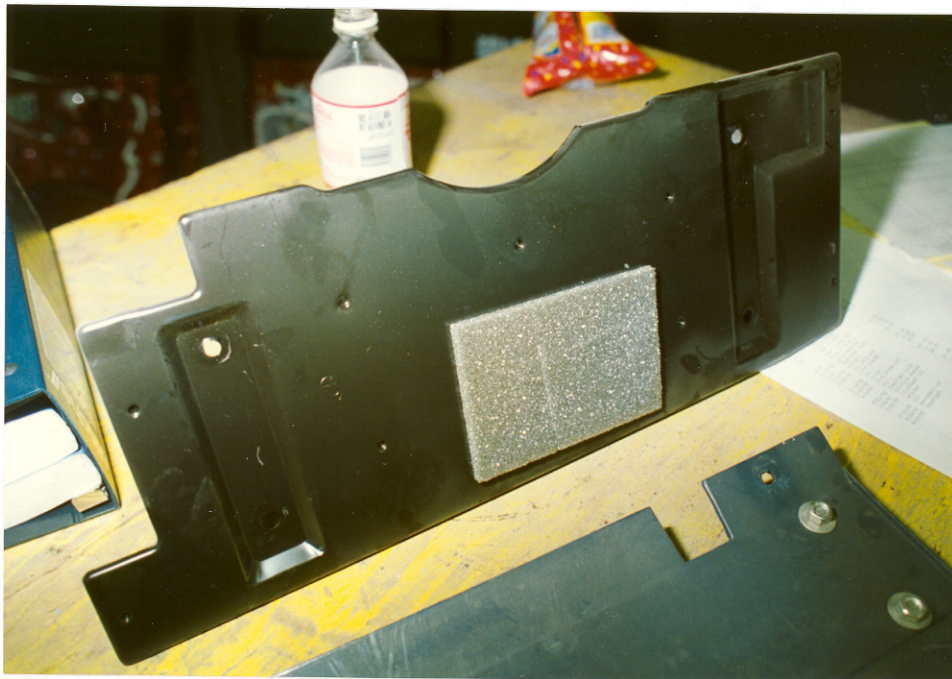
Driver's seat configuration and the manual 3-point belt system



Perpendicular view of the steering wheel rim with slight deformation to the upper rim



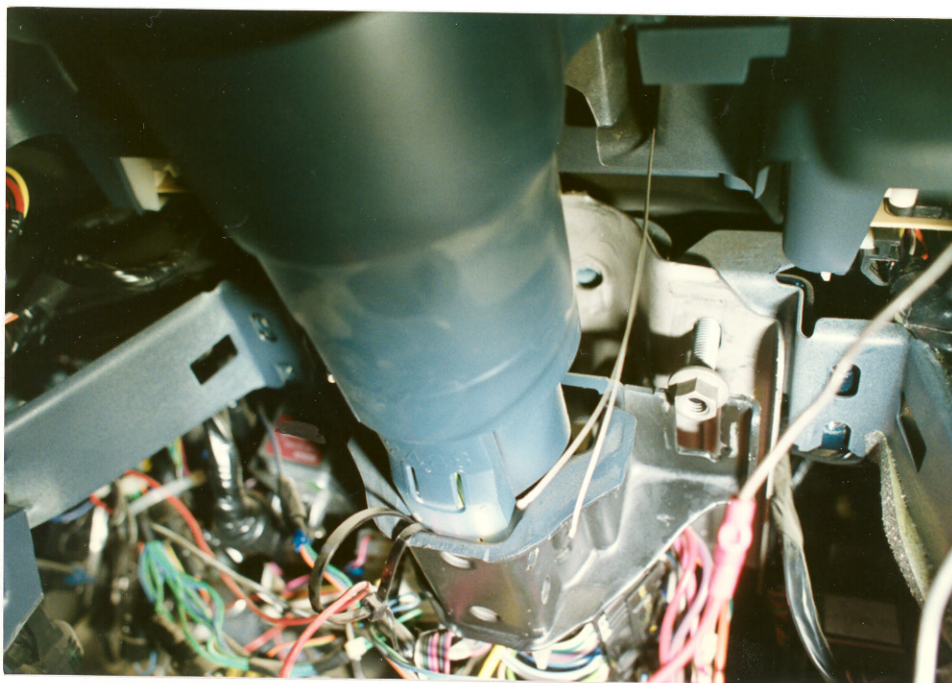
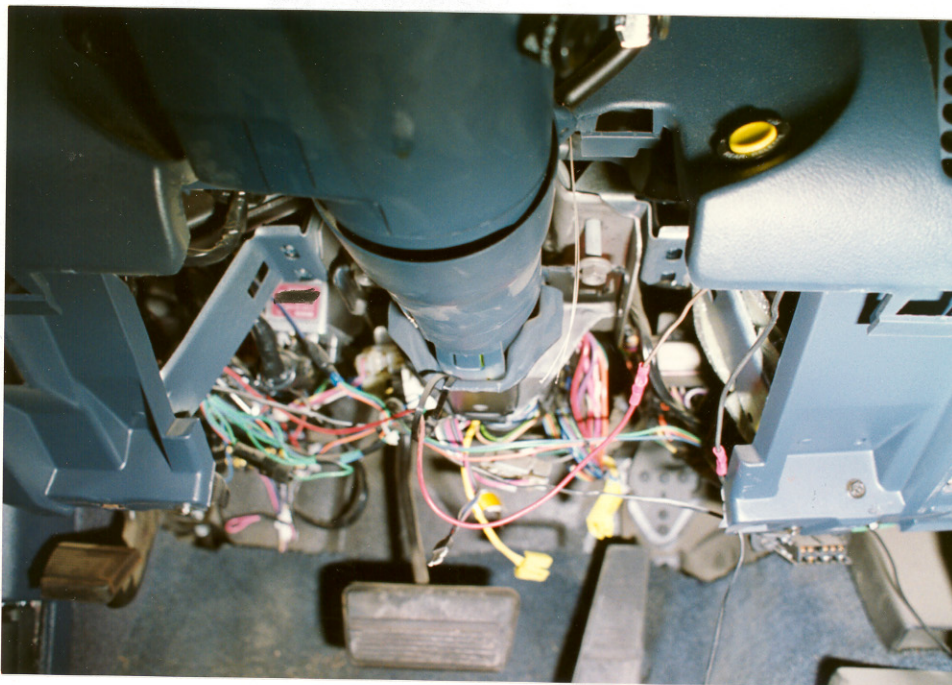
Knee bolster cover removed from vehicle



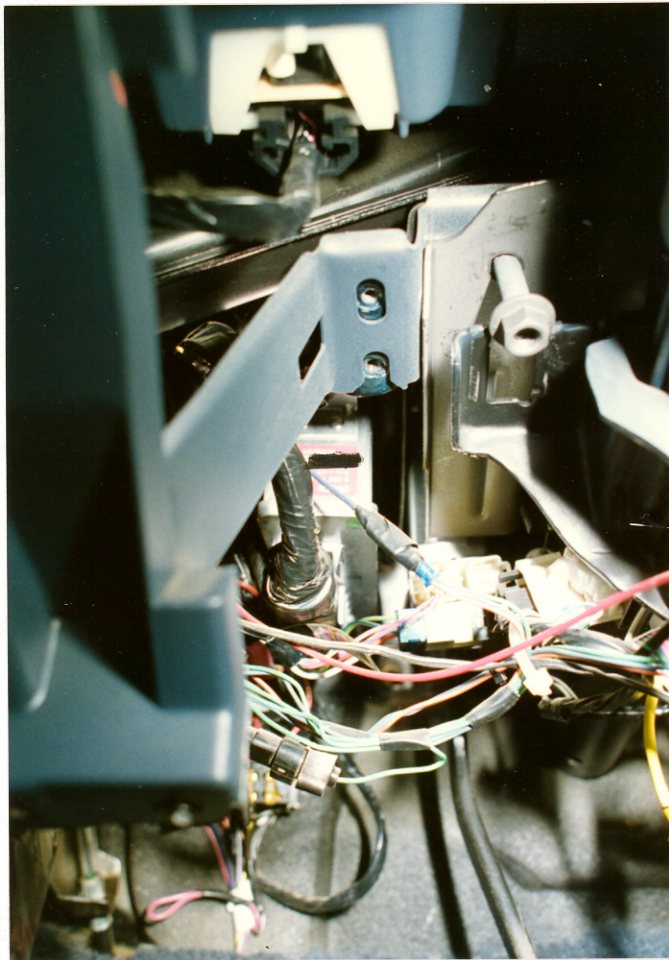
Knee bolster reinforcement



Knee bolster deflector bracket



Steering column shear capsule compression (blocks removed)
and SIR Diagnostic Energy Reserve Module (DERM)



Close-up view of the Derm

SLIDE INDEX

<u>Slide No(s).</u>	<u>Description</u>
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2	Driver injury mannequin
3	Lookback view of origin of trip
4,5	Vehicle exits parking lot and initiates right turn
6	Trajectory to struck pole
7	Displacement of struck pole
8	Lookback view of vehicle's trajectory
9	Frontal view of the 1992 Chevrolet Caprice
10	Close-up view of the pole impact damage
11	Displaced left frontal area
12	Left front three-quarter view
13	Left side view
14	Perpendicular view of the left frontal area showing bumper displacement
15	Left rear three-quarter view
16	Right front three-quarter view
17	Perpendicular view of the right frontal area showing the extent of crush
18,19	Upper radiator support panel displacement
20	Right front air bag discriminating (crash) sensor
21,22	Area and wiring (yellow connectors) for the left front discriminating sensor
23	Overall view of the driver's seated area
24	Perpendicular view of the steering wheel
25	Driver's seat and the stowed manual 3-point belt system
26	View across the interior from the right door area

SLIDE INDEX

<u>Slide No(s).</u>	<u>Description</u>
27,28	Knee bolster trim cover
29	Knee bolster reinforcement
30	Knee bolster deflector
31	DERM located to the left of the steering column
32,33	Left and right shear capsule compression (blocks removed by body shop)

**MANUFACTURE
CASE NUMBER
YEAR**

Calspan
Ca 9220
1992

SLIDES

THE FOLLOWING SLIDE(S) ARE NOT INCLUDED IN THIS CASE:

SLIDE NUMBER(S) 1,2



CA 9220 #3



CA9220 #4



CA 9220 #5



CA 9220 #6



CA9220 #7



CA 9220 #8



CA 9220 #9



CA 9220 #10



CA 9220 #11



CA9220 #12



CA 9220 #13



CA 9220 #14



CA 9220 #15



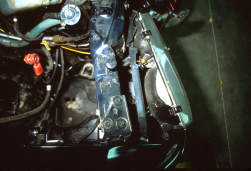
CA 9220 #16



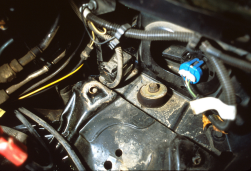
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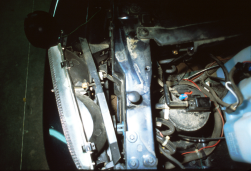
CA9220 #18



CA 9220 #19



CA 8220 #20



CA 8220 #21



CA 9220 #22



CA 9220 #23
Best Available



CA9220 #24
Best Available



CA9220 #25
Best Available



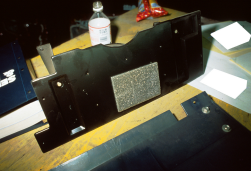
CA 9220 #26
Best Available



CA 8220 #27



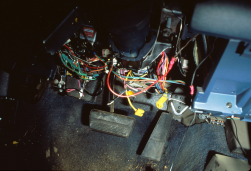
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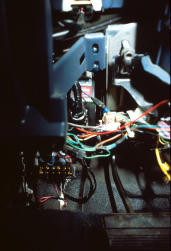
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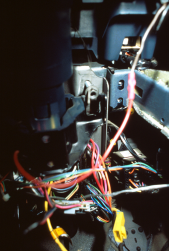
CA 9220 #30



CA 9220 #31



CA 9220 #32



CA 9220 #33

APPENDIX A

Police Accident Report

LOCAL CODES

[illegible]

[REDACTED] POLICE DEPARTMENT
COMPLAINT REPORT

DATE: [REDACTED]-[REDACTED]-92
COMPLAINANT: [REDACTED] Police Dept
ADDRESS: [REDACTED], Me

PAGE 1 OF 1
NO: [REDACTED]
PHONE: [REDACTED]

INCIDENT: Cruiser Accident LOCATION: [REDACTED] St

DATE & TIME: [REDACTED]-[REDACTED]-92/[REDACTED] REPORTED BY: [REDACTED]

VEH YR: 1992 MAKE: Chevrolet MODEL: 4 dr COLOR: blu
REG: Mui/400014 STATE: Me OWNER: Town of [REDACTED], Me

DRIVER: [REDACTED], [REDACTED] DOB/[REDACTED]
ADDRESS: [REDACTED], [REDACTED]

RAC: Cau SEX: M HGT: [REDACTED] WGT: [REDACTED] HAIR: Bro EYES: Bro

While on routine patrol in cruiser #2, a 1992 Chevrolet, I was northbound on [REDACTED] St enroute to pick up the duty officer who was coming on duty. A portable radio and clipboard had fallen down between the front seats. I was reaching for them as they were blocking the emergency light switches.

The car began to drift off to the right side of the roadway while my attention was diverted. When I looked up the car was heading directly towards the utility pole located in front of [REDACTED] shop on [REDACTED] St. I attempted to apply the brakes; however I was unable to stop the car in time. The vehicle struck the pole by the passenger's side headlight area damaging the grill, hood and fender. My estimated speed was 15-20 MPH at the time of the accident.

Sgt [REDACTED] was called to conduct the investigation. He, in turn, called to have the State Police investigate the accident according to Department policy. Sgt [REDACTED] then transported me to [REDACTED] Hospital to be checked for injuries as the air bag had not deployed and I had received some cuts and bruises.

The car was taken to [REDACTED] where it could be secured until the Chief was able to conduct his investigation.

OFFICER:

DATE:

[REDACTED] POLICE DEPARTMENT
COMPLAINT SUPPLEMENT

COMPLAINANT: [REDACTED] Police
ADDRESS: [REDACTED] St
[REDACTED], Me
OFFENSE: 10-50 Car #2
OFFICER: Sgt. [REDACTED]

PAGE: 1
PHONE: [REDACTED]
NO:
NO:

On [REDACTED]-92 at [REDACTED] PM I was called at home by [REDACTED] Dispatch to inform me that [REDACTED] Officer [REDACTED] had been involved in an accident with one of the town's police cruisers. Dispatcher [REDACTED] informed me that she had already tried to contact Chief [REDACTED] and Lt [REDACTED] with no luck. I asked if Officer [REDACTED] was hurt and was told that he stated that he was alright, just shaken up. I advised Dispatch that I would be enroute to the scene.

While enroute I informed Dispatch that I did not want the vehicle moved and requested they contact the [REDACTED] Police and ask if they would send a Trooper to the scene to do the accident investigation. At [REDACTED] hrs I was informed that Trooper [REDACTED] of the [REDACTED] Police would be enroute.

Upon my arrival Trooper [REDACTED] was already on the scene and was speaking with Officer [REDACTED], who was seated in Trooper [REDACTED] cruiser.

I spoke with Officer [REDACTED], who appeared shaken, and asked if he was alright. He stated, "Yes, it just knocked the wind out of me". I asked if he struck the steering wheel with his chest; he stated he had, but he had his vest on which absorbed the blow. I then told Officer [REDACTED] that I thought that it would be a good idea if he went to the hospital and got checked just to make sure. He agreed to go to the hospital with me.

I then looked at the scene and the damage to the cruiser. The vehicle struck the pole to the right of the center of the vehicle.

Also on the scene were Officer [REDACTED] of the [REDACTED] Police and [REDACTED] of [REDACTED] garage.

When Trooper [REDACTED] was done speaking with Officer [REDACTED] and taking pictures of the scene I took Officer [REDACTED] to the hospital. Officer [REDACTED] was seen by a doctor and told he was alright and could return to work. I then took Officer [REDACTED] back to his car to return home.

I secured at [REDACTED] hrs and returned home where I attempted to contact the Chief but he was out of town. I then contacted Selectmen [REDACTED] to make him aware of what had occurred. Mr. [REDACTED] thanked me for calling him but told me to do what I had to do; I was in charge in the Chief's absence.

On [REDACTED] at 2030 hrs I spoke with [REDACTED] by phone and gave him a brief synopsis of what is contained in this report.

APPENDIX B

Air Bag Supplement

ACCIDENT SUMMARY

ACCIDENT DATE / / 92

POLICE INVESTIGATED (1,2,9)*

 POLICECity County

GENERAL LOCALITY

- (1) Freeway, Limited Access
- (2) Urban (City)
- (3) Urban-Rural (mixed)
- (4) Rural, Fields

CONFIGURATION (First Harm)

- (0) Struck Object or Pedestrian
- (1) Rear-End
- (2) Head-On
- (3) Rear-to-Rear
- (4) Angle
- (5) Sideswipe-Same Direction
- (6) Sideswipe-Opposite Direct.
- (7) NonColl:eg Fell from Veh
- (8) NonImpact Deployment
- (9) Unknown

FIRE INVOLVED (0) None

- (1) AirBag Vehicle
- (2) Other Vehicle
- (3) Both Vehicles
- (9) Unknown

NUMBER: VEHICLES INVOLVED

(8)=8 or more

PERSONS INVOLVED

INJURED PERSONS

MAXIMUM AIS IN ACCIDENT

OTHER VEHICLE: MAXIMUM AIS

PRIME/DEPLOY IMPACT w AB VEH:
EVENT NUMBERCDC

TOTAL DELTA-V

Model Year, Make, Model, Body Type:

AIRBAG VEHICLE INSPECTION

DATE VEH. INSPECTED / 92

REASON VEHICLE NOT INSPECTED

- (0) Not Required
- (1) Inspection Completed
- (2) Cannot be Located**
- (3) Repaired or Destroyed**
- (5) Refual or Impounded**
- (7) Other*

**Specify:

IMPACT DATA OBTAINED

- (0) No Data Obtained
- (1) CDC Only
- (2) Crush Profile Only
- (3) Trajectory Data Only
- (4) CDC and Crush Profile
- (5) CDC and Trajectory
- (6) Crush and Trajectory
- (7) CDC, Crush & Trajectory

BASIS OF DELTA-V

- (0) Not Computed (Unknown Why)
- (1) CRASH - Damage Only
- (2) CRASH - Damage+Trajectory
- (3) Missing Vehicle Algorithm
- (4) Yielding Object Algorithm
- (5) Unknown Basis
- (6) One Vehicle Beyond Scope
- (7) Collision Beyond Scope
- (8) Insufficient Data

VEHICLE HISTORY

HAS AIRBAG VEHICLE BEEN IN
ANY PRIOR IMPACTS (1,2,9)*HAS ANY PRIOR MAINTENANCE/SERVICE
BEEN PERFORMED ON SYSTEM(1,2,9)**Describe:

AIRBAG VEHICLE: FLEET GM POLICE

VIN 1G1BL537XN0MILEAGE 20,726.4

SYSTEM READINESS LAMP
(In Instrument Cluster)

PRE-IMPACT LAMP CONDITION

- (1) Functioning/ProvedOut
- (2) Inoperative
- (9) Unknown

**DRIVER'S REPORT OF
PRE-IMPACT FLASHING**

- (00) No Flashing Reported
- (01) Continuous Flashing
- (02) -- >Number of Flashes
- (11)
- (12) Constant Light
- (19) Flashing, Unkn Number
- (88) Not App (system removed)
- (99) Unknown

PERIOD OF PRE-IMPACT FLASHING

- (0) No Flashing
- (1) Same Day as Impact
- (2) Prior Day
- (3) Prior Two Days
- (4) Prior Week
- (5) Prior Month
- (6) Over One Month
- (9) Unknown

POST-IMPACT LAMP CONDITION

- (1) Functioning/ProvedOut
- (2) Inoperative
- (9) Unknown

POST-IMPACT FLASHING

- (00) No Flashing
- (01) Continuous Flashing
- (02) -- >Number of Flashes
- (11)
- (12) Constant Light
- (19) Flashing, Unkn Number
- (88) Not Appl (removed)
- (99) Unknown

**AIRBAG VEHICLE
FIRST HARMFUL EVENT**

3 2

- (01) Fire or explosion
- (02) Immersion
- (03) Gas Inhalation
- (04) Fell from vehicle
- (05) Injured in vehicle
- (06) Other noncollision (specify):
- (07) Overturn
- (08) Jackknife with intraunit damage
- Collision With:
- (09) Pedestrian
- (10) Pedalcyclist
- (11) Railway train
- (12) Animal
- (13) Motor vehicle in transport (same roadway)
- (14) Motor vehicle in transport (other roadway)
- (15) Parked motor vehicle
- (16) Other type nonmotorist (specify):
- (17) Thrown or falling object
- (18) Boulder
- Collision with Fixed Object:
- (20) Building
- (21) Impact attenuator/Crash Cushion
- (22) Bridge pier or abutment
- (23) Bridge parapet end
- (24) Bridge rail
- (25) Guardrail
- (26) Concrete traffic barrier
- (27) Median barrier
- (28) Other longitudinal barrier (specify):
- (29) Highway/Traffic sign post
- (30) Overhead sign support
- (31) Luminaire/Light support
- (32) Utility pole
- (33) Other post, pole, or support (specify):
- (34) Culvert
- (35) Curb
- (36) Ditch
- (37) Embankment-earth
- (38) Embankment-rock, stone or concrete
- (39) Fence (wooden, wire, chain link, etc.)
- (40) Wall (stone, rock, metal, etc.)
- (41) Fire hydrant
- (42) Shrubbery
- (43) Tree
- (44) Other fixed object (specify):
- (45) Pavement surface irregularity (pothole, grooved, grates)
- (99) Unknown

AIRBAG VEHICLE IMPACT SUMMARY

VEHICLE ROLE

- (0) Non-collision
 (1) Striking Unit
 (2) Struck Unit
 (3) Both Striking and Struck
 (9) Unknown

MANNER OF LEAVING SCENE

- (1) Driven
 (2) Towed-due to damage
 (3) Towed - not for damage
 (4) Towed - details unknown
 (5) Abandoned
 (9) Unknown

NUMBER OF IMPACT EVENTS

- (8) 8 or more, (9) Unknown

ROLLOVER

- (0) No Rollover
 (1) First Event
 (2) Subsequent Event
 (3) Yes, Unknown Event
 (9) Unknown

OVERRIDE/UNDERRIDE

- (1) No over/underride
 (1) Override - 1st CDC
 (3) - Other CDC
 (4) Underride - 1st CDC
 (6) - Other CDC
 (9) Unknown

AIRBAG VEHICLE DAMAGE

- CODES: (1) Yes, DAMAGED
 (2) No Damage
 (9) Unknown

LEFT FRONT FENDER DAMAGE

RIGHT FRONT FENDER DAMAGE

CENTER TOP OF GRILLE DAMAGE

FRONT BUMPER E.A. STATUS: Left

- (1) Normal Right
 (2) Extended
 (3) Partial Compression
 (4) Complete Compression
 (5) Not Applicable
 (9) Unknown

FIRST AIRBAG VEHICLE IMPACT:

CONFIGURATION

- (0) Struck Object or Pedestrian
 (1) Rear-End
 (2) Head-On
 (3) Rear-to-Rear
 (4) Angle
 (5) Sideswipe - Same Direction
 (6) Sideswipe-Opposite Direct.
 (7) NonColl:eg Fell from Veh
 (8) NonImpact Deployment
 (9) Unknown

CDC 12 - F 2 E N - 1OBJECT CONTACTED: UTILITY POLE

PRIMARY/DEPLOYMENT IMPACT:

EVENT NUMBER

TOTAL DELTA-V 12.6 mphLONGITUDINAL DELTA-V -12.6 mph

CONFIGURATION

- (0) Struck Object or Pedestrian
 (1) Rear-End
 (2) Head-On
 (3) Rear-to-Rear
 (4) Angle
 (5) Sideswipe - Same Direction
 (6) Sideswipe-Opposite Direct.
 (7) NonColl:eg Fell from Veh
 (8) NonImpact Deployment
 (9) Unknown

CDC 12 - F 2 E N - 1OBJECT CONTACTED: UTILITY POLE

NOTES:

SYSTEM DAMAGE

AIRBAG SUPPLEMENT

AB-4

AIRBAG SYSTEM DAMAGE

CODES: (1) Yes, Damaged*
 (2) No, Intact
 (8) Not App. (Removed)
 (9) Unknown

AIRBAG MODULE

SENSORS: Left Front

Center Front

Right Front

Rear, Cowl

DIAGNOSTIC MODULE

WIRING

KNEE DIVERTER

INDICATION OF DISCONNECTED
 OR LOOSE ELECTRICAL
 CONNECTORS

CONDITION OF DEPLOYED BAG

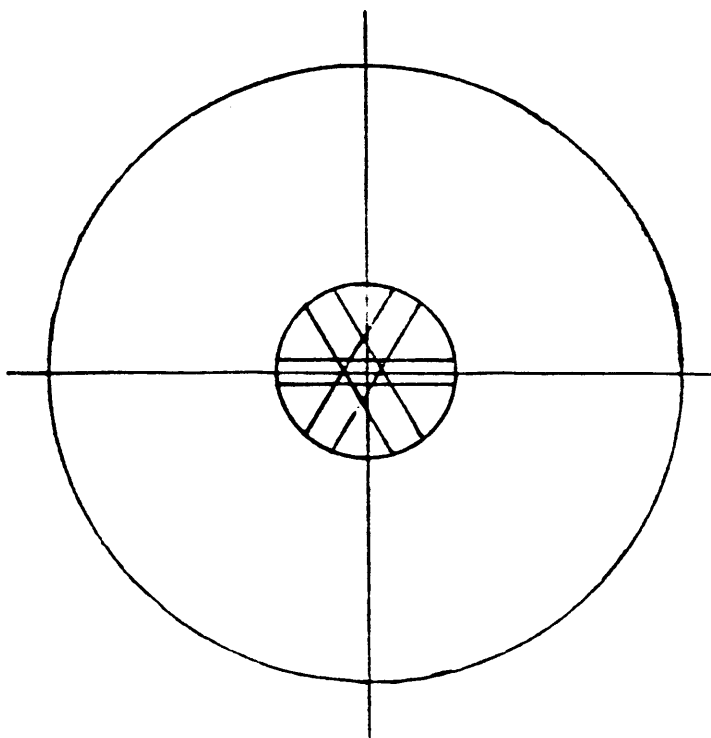
(1) Bag Intact
 (2) Split or Torn*
 (3) Cut by Object In Impact*
 (4) Cut after Accident*
 (5) Other (e.g., burned)*
 (8) N/A (not deployed)
 (9) Unknown

*DESCRIBE System and Bag Damage:

NOTE DAMAGE AND CONTACT MARKS ON AIRBAG DIAGRAMS BELOW:

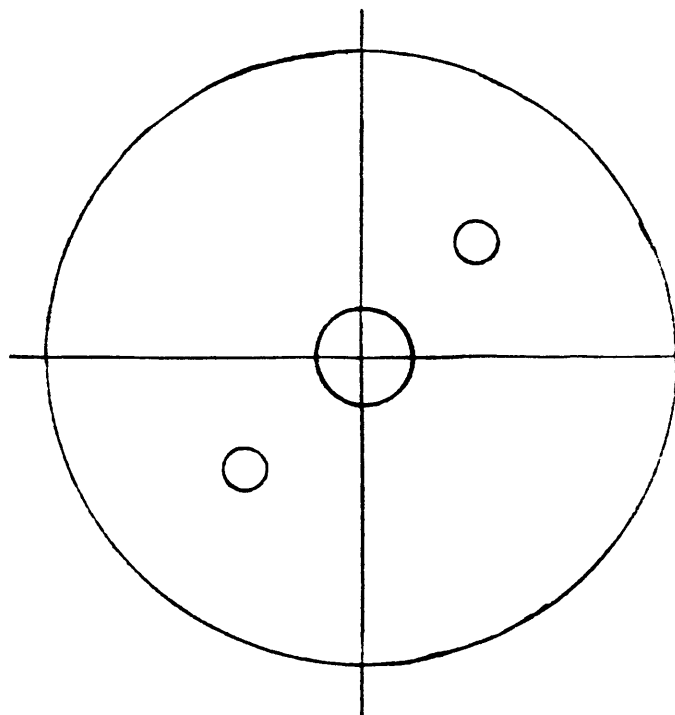
NON-DEPLOYMENT

TOP



FRONT

BOTTOM



BACK

OCCUPANTS/DRIVER

AIRBAG SUPPLEMENT AB-5

OCCUPANTS of AIRBAG CAR

NUMBER OF OCCUPANTS IN VEHICLE

(8) 8 or more

NUMBER OF INJURED PERSONS

MAXIMUM AIS IN AIRBAG VEHICLE

(0) No Injury

(1-6) AIS Severity

(7) Injured, Unknown Severity

(9) Unknown

NOTES:

DRIVER AGE 50 SEX MALE

NUMBER OF DRIVER INJURIES

SOURCE OF BEST INJURY DATA

(0) Not Injured

(1) Autopsy w/wo med. records

(2) Hospital Medical Records

(3) Emergency Room only

(4) Private physician, Clinic

(5) Lay Coroner Report

(6) EMS Personnel

(7) Interviewee

(8) Police

(9) Unknown

MAXIMUM AIS BY BODY REGION

REGION MAX AIS CONTACT

Head/Neck/Face

Chest

Abdomen

Leg/Hips

Other (Arms)

DRIVER MAXIMUM

EJECTION: Extent NONEPortal N/A

DRIVER-PASSENGER

AIRBAG SUPPLEMENT AB-6

DRIVER BELT USAGE: (1) Used (2) Not Used (9) Unknown 2

Evidence: _____

DRIVER POSTURE: Any Comments Recorded (1) Yes, (2) No 1

Describe driver's posture and position on seat including specific comments on head, torso, buttocks, legs and feet. Also note hand and arm position. Did driver brace before crash? Describe:

DRIVER FOREIGN OBJECTS: Comments Recorded (1) Yes, (2) No 1

Was driver wearing contact lenses or eyeglasses? Or holding any foreign object at the time of the impact (packages on lap, pipe, food, bottle, cigarette, etc.)? Did any lenses, objects, or jewelry play any role?:

PEN IN SHIRT POCKET, BADGE OVER LEFT POCKET

DRIVER COMMENTS: Comments Recorded (1) Yes, (2) No 1

Was the driver aware that the vehicle was equipped with a supplemental restraint system? Did driver offer any comments on smoke, noise, etc.? Did the driver comment on the airbag as a restraint system? Describe:

DRIVER WAS AWARE, NO DEPLOYMENT

PASSENGER-AIRBAG CONTACT (1) Yes, (2) No, (9) Unknown 8

Describe: NO PASSENGER

APPENDIX C

CRASHPC Output
(Damage and Trajectory Algorithm)

METRIC VERSION

SUMMARY OF CRASH50 RESULTS USING DAMAGE

92-20

	SPEED CHANGE (DAMAGE)	IMPACT SPEED (DAMAGE AND SPINDOUT)
VEHICLE #1		
TOTAL	21 KPH (13 MPH)	23 KPH (14 MPH)
LONGITUDINAL	-21 KPH (-13 MPH)	23 KPH (14 MPH)
LATITUDINAL	0 KPH (0 MPH)	0 KPH (0 MPH)
PDOF ANGLE	0 DEGREES	
ENERGY DISSIPATED =	33609 JOULES (24786 FT-LB)	
VEHICLE #2		
TOTAL	0 KPH (0 MPH)	0 KPH (0 MPH)
LONGITUDINAL	0 KPH (0 MPH)	0 KPH (0 MPH)
LATITUDINAL	0 KPH (0 MPH)	0 KPH (0 MPH)
PDOF ANGLE	0 DEGREES	
ENERGY DISSIPATED =	0 JOULES (0 FT-LB)	

SCENE INFORMATION

	VEHICLE #1	VEHICLE #2
IMPACT X-POSITION	-2.5 M. (-8.3 FT.)	1.3 M. (4.3 FT.)
IMPACT Y-POSITION	-1.4 M. (-1.3 FT.)	1.0 M. (3.3 FT.)
IMPACT HEADING ANGLE	0 DEGREES	180 DEGREES
REST X-POSITION	-2.5 M. (-8.3 FT.)	1.3 M. (4.3 FT.)
REST Y-POSITION	-1.4 M. (-1.3 FT.)	1.0 M. (3.3 FT.)
REST HEADING ANGLE	0 DEGREES	180 DEGREES
SKID-CLIP ANGLE	0 DEGREES	0 DEGREES
DIRECTION OF ROTATION	NONE	NONE
AMOUNT OF ROTATION	0360	0360

COLLISION AND SEPARATION

	VEHICLE #1	VEHICLE #2
COLLISION		
IMPACT X-POSITION	-2.5 M. (-8.3 FT.)	1.3 M. (4.2 FT.)
IMPACT Y-POSITION	-1.4 M. (-4.5 FT.)	1.0 M. (3.2 FT.)
IMPACT HEADING ANGLE	0 DEGREES	180 DEGREES
SEPARATION (USING SPINDOUT)		
US	3 KPH (2 MPH)	0 KPH (0 MPH)
VS	0 KPH (0 MPH)	0 KPH (0 MPH)
PSID	0 DEG/SEC	0 DEG/SEC

DAMAGE DATA

	VEHICLE #1	VEHICLE #2
SIZE CATEGORY	4	11
STIFFNESS CATEGORY	4	0
VEHICLE WEIGHT	1940 KGS (4277 LBS)	453600 KGS (1000000 LBS)
CDC	12FYEM1	CARRIED
PDOF ANGLE	0 DEGREES	0 DEGREES
CRUSH LENGTH	165 CM. (65 IN.)	0 CM. (0 IN.)
C1	2 CM. (1 IN.)	0 CM. (0 IN.)
C2	4 CM. (2 IN.)	0 CM. (0 IN.)
C3	12 CM. (5 IN.)	0 CM. (0 IN.)
C4	20 CM. (8 IN.)	0 CM. (0 IN.)
C5	26 CM. (10 IN.)	0 CM. (0 IN.)
C6	8 CM. (3 IN.)	0 CM. (0 IN.)
D	18 CM. (7 IN.)	0 CM. (0 IN.)
D'	37 CM. (14 IN.)	0 CM. (0 IN.)

0 INDICATES DEFAULT VALUE

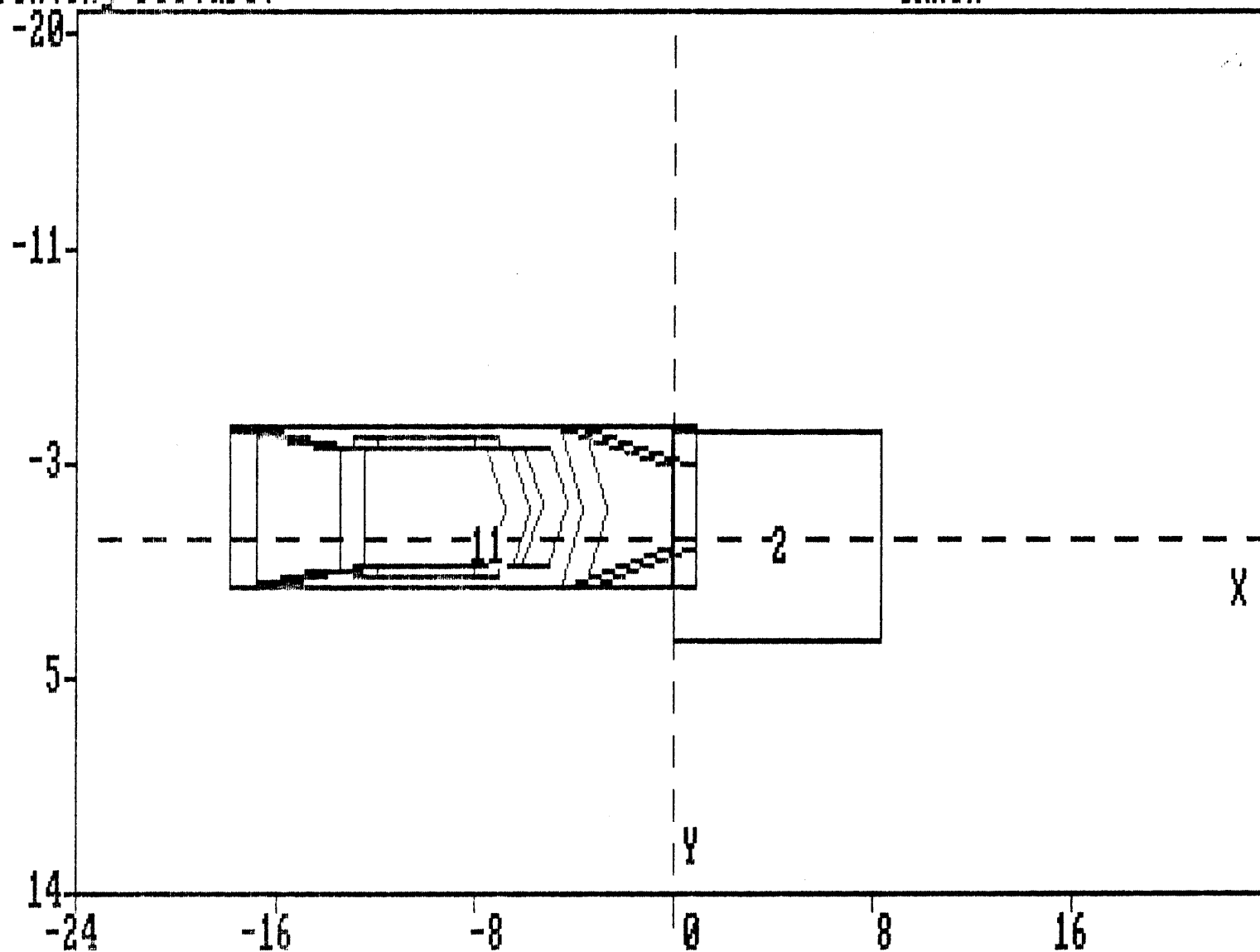
DIMENSIONS AND INERTIAL PROPERTIES

	VEHICLE #1	VEHICLE #2
CG TO FRONT AXLE	139 CM. (55 IN.)	127 CM. (50 IN.)
CG TO REAR AXLE	150 CM. (59 IN.)	127 CM. (50 IN.)
TRACK	157 CM. (62 IN.)	127 CM. (50 IN.)
CG TO FRONT OF VEH	251 CM. (99 IN.)	127 CM. (50 IN.)
CG TO REAR OF VEH	-290 CM. (-114 IN.)	-127 CM. (-50 IN.)
CG TO SIDE OF VEH	98 CM. (39 IN.)	127 CM. (50 IN.)
MOMENT OF INERTIA	10871 KGS (41602 LBS)	***** KGS (***** LBS)
VEHICLE MASS	3 KGS (11 LBS)	1179 KGS (2600 LB)
ROLLING RESISTANCE		
LEFT FRONT WHEEL	.02	.00
RIGHT FRONT WHEEL	.02	.00
LEFT REAR WHEEL	.00	.00
RIGHT REAR WHEEL	.20	.00

COEFFICIENT OF FRICTION = .70

Printing Picture:

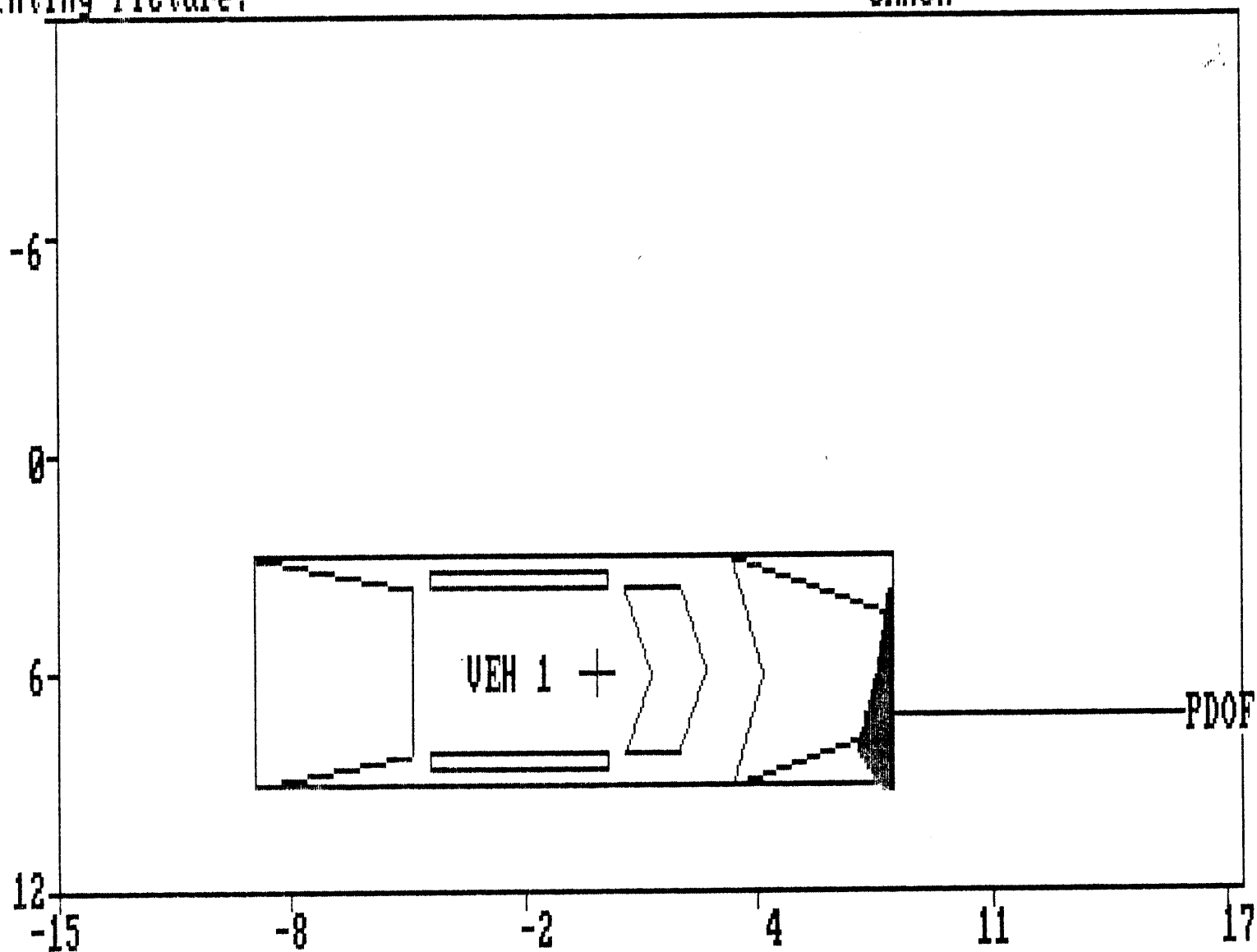
CRASH



SCENE DESCRIPTION

Printing Picture:

CRASH



DAMAGE DESCRIPTION

APPENDIX D

NASS OCCUPANT FORMS



GENERAL VEHICLE FORM

1. ~~Primary Sampling Unit Number~~ _____2. Case Number - Stratum 92-203. Vehicle Number 01

VEHICLE IDENTIFICATION

4. Vehicle Model Year 92Code the last two digits of the model year
(99) Unknown5. Vehicle Make (specify): 20CHEVROLETApplicable codes are found in your
NASS Data Collection, Coding and
Editing Manual.
(99) Unknown6. Vehicle Model (specify): 002CAPRICEApplicable codes are found in your
NASS Data Collection, Coding and
Editing Manual.
(999) Unknown7. Body Type 04Note: Applicable codes may be found on
the back of this page.

8. Vehicle Identification Number

1G1BL537XNW-----Left justify; Slash zeros and letter Z (0 and Z)
No VIN—Code all zeros
Unknown—Code all nine's

OFFICIAL RECORDS

9. Police Reported Vehicle Disposition 1(0) Not towed due to vehicle damage
(1) Towed due to vehicle damage
(9) Unknown10. Police Reported Travel Speed 99Code to the nearest mph (NOTE: 00 means
less than 0.5 mph)
(97) 96.5 mph and above
(99) Unknown11. Police Reported Alcohol Presence 0(0) No alcohol present
(1) Yes (alcohol present)
(7) Not reported
(8) No driver present
(9) UnknownNote: See variables 37 through 55
(Page 4) for information on Other Drugs12. Alcohol Test Result For Driver 96Code actual value (decimal implied
before first digit—0.xx)
(95) Test refused
(96) None given
(97) AC test performed, results unknown
(98) No driver present
(99) Unknown

Source: _____

ACCIDENT RELATED

13. Speed Limit 25(00) No statutory limit
Code posted or statutory speed limit
(99) Unknown14. Attempted Avoidance Maneuver 02(00) No impact
(01) No avoidance actions
(02) Braking (no lockup)
(03) Braking (lockup)
(04) Braking (lockup unknown)
(05) Releasing brakes
(06) Steering left
(07) Steering right
(08) Braking and steering left
(09) Braking and steering right
(10) Accelerating
(11) Accelerating and steering left
(12) Accelerating and steering right
(97) No driver present
(98) Other action (specify):
(99) Unknown15. Accident Type 01Applicable codes may be found on the
back of page two of this field form
(00) No impact
Code the number of the diagram that
best describes the accident circumstance
(98) Other accident type (specify):
(99) Unknown

**** SKIP TO VARIABLE GV37 IF GV07 DOES NOT EQUAL 01-49 ****

CODES FOR BODY TYPE

CDS APPLICABLE VEHICLES

Automobiles

- (01) Convertible (excludes sun-roof, t-bar)
- (02) 2-door sedan, hardtop, coupe
- (03) 3-door/2-door hatchback
- (04) 4-door sedan, hardtop
- (05) 5-door/4-door hatchback
- (06) Station wagon (excluding van and truck based)
- (07) Hatchback, number of doors unknown
- (08) Other automobile type (specify): _____

- (09) Unknown automobile type

Automobile Derivatives

- (10) Auto based pickup (includes El Camino, Caballero, Ranchero, Brat, and Rabbit pickup)
- (11) Auto based panel (cargo station wagon, auto based ambulance/hearse)
- (12) Large limousine - more than four side doors or stretched chassis
- (13) Three-wheel automobile or automobile derivative

Utility Vehicles ($\leq 10,000$ lbs GVWR)

- (14) Compact utility (Jeep CJ-2 - CJ-7, Scrambler, Golden Eagle, Renegade, Laredo, Wrangler, Cherokee [84 and after], Dispatcher, Raider, Bronco II, Bronco [76 and before], Explorer, S-10 Blazer, Geo Tracker, Bravado, S-15 Jimmy, Thing, Pathfinder, Trooper, Trooper II, Rodeo, Amigo, Navajo, 4-Runner, Montero, Samurai, Sidekick, Rocky)
- (15) Large utility (includes Jeep Cherokee [83 and before], Ramcharger, Trailduster, Bronco-fullsize [78 and after], fullsize Blazer, fullsize Jimmy, Landcruiser, Rover, Scout)
- (16) Utility station wagon (Chevy Suburban, GMC Suburban, Travelall, Grand Wagoneer, includes suburban limousine)
- (19) Utility, unknown body type

Van Based Light Trucks ($\leq 10,000$ lbs GVWR)

- (20) Minivan (Chrysler Town and Country, Caravan, Grand Caravan, Voyager, Grand Voyager, Mini-Ram, Dodge/Plymouth Vista, Aerostar, Lumina APV, Trans Sport, Silhouette, Astro, Safari, Toyota Van, Toyota Minivan, Previa, Nissan Minivan, Mitsubishi Minivan, Vanagon/Camper.)
- (21) Large van (B150-B350, Sportsman, Royal, Maxiwagon, Ram, Tradesman, Voyager [83 and before], E150-E350, Econoline, Clubwagon, Chateau, G10-G30, Chevy Van, Beauville, Sport Van, G15-G35, Rally Van, Vandura.)
- (22) Step van or walk-in van ($\leq 10,000$ lbs GVWR)
- (23) Van based motorhome ($\leq 10,000$ lbs GVWR)
- (28) Other van type (Hi-Cube Van, Kary) (specify): _____

- (29) Unknown van type

Light Conventional Trucks (Pickup style cab, $\leq 10,000$ lbs GVWR)

- (30) Compact pickup (D50, Colt P/U, Ram 50, Dakota, Arrow Pickup [foreign], Ranger, Courier, S-10, T-10, LUV, S-15, T-15, Sonoma, Datsun/Nissan Pickup, P'up, Mazda Pickup, Toyota Pickup, Mitsubishi Pickup)
- (31) Large Pickup (Jeep Pickup, Comanche, Ram Pickup, D100-D350, W100-W350, F100-F350, C10-C35, K10-K35, R10-R35, V10-V35, Silverado, Sierra, R100-R500.)
- (32) Pickup with slide-in camper
- (33) Convertible pickup
- (39) Unknown pickup style light conventional truck type

Other Light Trucks ($\leq 10,000$ lbs GVWR)

- (40) Cab chassis based (includes rescue vehicles, light stake, dump, and tow truck)
- (41) Truck based panel
- (42) Light truck based motorhome (chassis mounted)
- (45) Other light conventional truck type
- (48) Unknown light truck type
- (49) Unknown light vehicle type (automobile, utility, van, or light truck)

OTHER VEHICLES

Buses (Excludes Van Based)

- (50) School bus (designed to carry students, not cross country or transit)
- (58) Other bus type (e.g., transit, intercity, bus based motorhome) (specify): _____
- (59) Unknown bus type

Medium/Heavy Trucks ($> 10,000$ lbs GVWR)

- (60) Step van ($> 10,000$ lbs GVWR)
- (61) Single unit straight truck ($10,000$ lbs $<$ GVWR $\leq 19,500$ lbs)
- (62) Single unit straight truck ($19,500$ lbs $<$ GVWR $\leq 26,000$ lbs)
- (63) Single unit straight truck ($> 26,000$ lbs GVWR)
- (64) Single unit straight truck, GVWR unknown
- (65) Medium/heavy truck based motorhome
- (67) Truck-tractor with no cargo trailer
- (68) Truck-tractor pulling one trailer
- (69) Truck-tractor pulling two or more trailers
- (70) Truck-tractor (unknown if pulling trailer)
- (78) Unknown medium/heavy truck type
- (79) Unknown truck type (light/medium/heavy)

Motored Cycles (Does Not Include All-Terrain Vehicles/Cycles)

- (80) Motorcycle
- (81) Moped (motorized bicycle)
- (82) Three-wheel motorcycle or moped
- (88) Other motored cycle (minibike, motorscooter) (specify): _____
- (89) Unknown motored cycle type

Other Vehicles

- (90) ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle)
- (91) Snowmobile
- (92) Farm equipment other than trucks
- (93) Construction equipment other than trucks
- (97) Other vehicle type
- (99) Unknown body type

OCCUPANT RELATED

16. Driver Presence in Vehicle 1
 (0) Driver not present
 (1) Driver present
 (9) Unknown
17. Number of Occupants This Vehicle 01
 (00-96) Code actual number of occupants for this vehicle
 (97) 97 or more
 (99) Unknown
18. Number of Occupant Forms Submitted 01

24. Rollover 0
 (0) No rollover (no overturning)
- Rollover (primarily about the longitudinal axis)*
 (1) Rollover, 1 quarter turn only
 (2) Rollover, 2 quarter turns
 (3) Rollover, 3 quarter turns
 (4) Rollover, 4 or more quarter turns (specify):

- (5) Rollover--end-over-end (i.e., primarily about the lateral axis)
 (9) Rollover (overturn), details unknown

VEHICLE WEIGHT ITEMS

19. Vehicle Curb Weight 03,900
3907 Code weight to nearest 100 pounds.
 (010) Less than 1050 pounds
 (135) 13,500 pounds or more
 (999) Unknown

Source: _____

20. Vehicle Cargo Weight 0,200
200 Code weight to nearest 100 pounds. POLICE EQUIPMENT
 (00) Less than 50 pounds & "PASSENGER CAGE"
 (97) 9,650 pounds or more
 (99) Unknown

RECONSTRUCTION DATA

21. Towed Trailing Unit 0
 (0) No towed unit
 (1) Yes--towed trailing unit
 (9) Unknown
22. Documentation of Trajectory Data for This Vehicle 0
 (0) No
 (1) Yes
23. Post Collision Condition of Tree or Pole (For Highest Delta V) 1
 (0) Not collision (for highest delta V) with tree or pole
 (1) Not damaged
 (2) Cracked/sheared
 (3) Tilted <45 degrees
 (4) Tilted ≥45 degrees
 (5) Uprooted tree
 (6) Separated pole from base
 (7) Pole replaced
 (8) Other (specify):

 (9) Unknown

OVERRIDE/UNDERRIDE (THIS VEHICLE)

25. Front Override/Underride (this Vehicle) 0
26. Rear Override/Underride (this Vehicle) 0
- (0) No override/underride, or not an end-to-end impact
- Override (see specific CDC)*
 (1) 1st CDC
 (2) 2nd CDC
 (3) Other not automated CDC (specify):

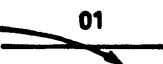

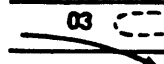
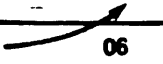

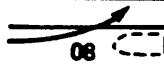
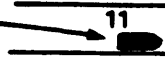
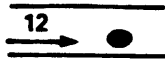
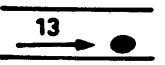
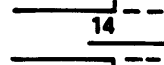

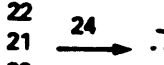
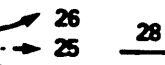
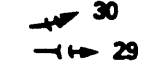

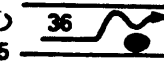
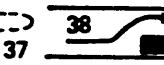
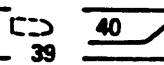
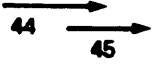
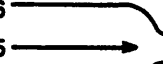


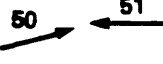


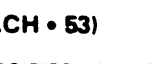

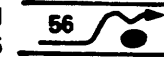

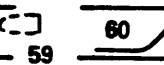



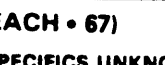
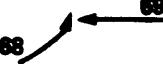
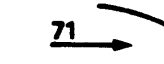
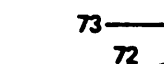

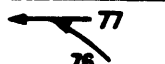



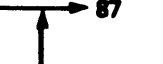


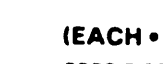
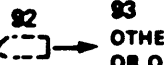



- Underride (see specific CDC)*
 (4) 1st CDC
 (5) 2nd CDC
 (6) Other not automated CDC (specify):

- (7) Medium/heavy truck or bus override
 (9) Unknown

HEADING ANGLE AT IMPACT FOR HIGHEST DELTA V

Values: (000)-(359) Code actual value
 (997) Noncollision
 (998) Impact with object
 (999) Unknown

27. Heading Angle For This Vehicle 998
28. Heading Angle For Other Vehicle 998

Category	Configuration	ACCIDENT TYPES (Includes Intent)				
I. Single Driver	A. Right Roadside Departure	 01 DRIVE OFF ROAD	 02 CONTROL/ TRACTION LOSS	 03 AVOID COLLISION WITH VEH., PED., ANIM.	04 SPECIFICS OTHER	05 SPECIFICS UNKNOWN
	B. Left Roadside Departure	 06 DRIVE OFF ROAD	 07 CONTROL/ TRACTION LOSS	 08 AVOID COLLISION WITH VEH., PED., ANIM.	09 SPECIFICS OTHER	10 SPECIFICS UNKNOWN
	C. Forward Impact	 11 PARKED VEH.	 12 STA. OBJECT	 13 PEDESTRIAN/ ANIMAL	 14 END DEPARTURE	15 SPECIFICS OTHER 16 SPECIFICS UNKNOWN
II. Same Trafficway Same Direction	D. Rear-End	 20 STOPPED 21, 22, 23	 22 SLOWER 25, 26, 27	 24 DECEL. 28, 30, 31	 26 AVOID COLLISION WITH VEH.	(EACH • 32) SPECIFICS OTHER (EACH • 33) SPECIFICS UNKNOWN
	E. Forward Impact	 34 CONTROL/ TRACTION LOSS	 36 CONTROL/ TRACTION LOSS	 38 AVOID COLLISION WITH VEH.	 40 AVOID COLLISION WITH OBJECT	(EACH • 42) SPECIFICS OTHER (EACH • 43) SPECIFICS UNKNOWN
	F. Sideswipe Angle	 44 LATERAL MOVE	 46 LATERAL MOVE	 48 AVOID COLLISION WITH VEH.	 50 AVOID COLLISION WITH OBJECT	(EACH • 48) SPECIFICS OTHER (EACH • 49) SPECIFICS UNKNOWN
III. Same Trafficway Opposite Direction	G. Head-On	 50 LATERAL MOVE	 52 AVOID COLLISION WITH VEH.	 54 AVOID COLLISION WITH OBJECT	 56 AVOID COLLISION WITH VEH.	(EACH • 52) SPECIFICS OTHER (EACH • 53) SPECIFICS UNKNOWN
	H. Forward Impact	 54 CONTROL/ TRACTION LOSS	 56 CONTROL/ TRACTION LOSS	 58 AVOID COLLISION WITH VEH.	 60 AVOID COLLISION WITH OBJECT	(EACH • 62) SPECIFICS OTHER (EACH • 63) SPECIFICS UNKNOWN
	I. Sideswipe/Angle	 64 LATERAL MOVE	 66 AVOID COLLISION WITH VEH.	 68 AVOID COLLISION WITH OBJECT	 70 AVOID COLLISION WITH VEH.	(EACH • 66) SPECIFICS OTHER (EACH • 67) SPECIFICS UNKNOWN
IV. Change Trafficway Vehicle Turning	J. Turn Across Path	 68 INITIAL OPPOSITE DIRECTIONS	 70 INITIAL SAME DIRECTIONS	 72 AVOID COLLISION WITH VEH.	 74 AVOID COLLISION WITH OBJECT	(EACH • 74) SPECIFICS OTHER (EACH • 75) SPECIFICS UNKNOWN
	K. Turn Into Path	 76 TURN INTO SAME DIRECTION	 78 TURN INTO OPPOSITE DIRECTIONS	 80 AVOID COLLISION WITH VEH.	 82 AVOID COLLISION WITH OBJECT	(EACH • 84) SPECIFICS OTHER (EACH • 85) SPECIFICS UNKNOWN
V. Intersecting Paths (Vehicle Damage)	L. Straight Paths	 86	 88	 90 AVOID COLLISION WITH VEH.	 92 AVOID COLLISION WITH OBJECT	(EACH • 90) SPECIFICS OTHER (EACH • 91) SPECIFICS UNKNOWN
VI. Miscellaneous	M. Backing Etc.	 92 BACKING VEH.	 93 OTHER VEH. OR OBJECT	 98 OTHER ACCIDENT TYPE	 99 UNKNOWN ACCIDENT TYPE	00 NO IMPACT

29. Basis for Total Delta V (highest) 2*Delta V Calculated*

- (1) CRASH program—damage only routine
- (2) CRASH program—damage and trajectory routine
- (3) Missing vehicle algorithm

Delta V Not Calculated

- (4) At least one vehicle (which may be this vehicle) is beyond the scope of an acceptable reconstruction program, regardless of collision conditions.
- (5) All vehicles within scope (CDC applicable) of CRASH program but one of the collision conditions is beyond the scope of the CRASH program or other acceptable reconstruction technique, regardless of adequacy of damage data.
- (6) All vehicle and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available.

COMPUTER GENERATED DELTA V

30. Total Delta V

Secondary Highest

1313 Nearest mph

(NOTE: 00 means less than
0.5 mph)
(97) 96.5 mph and above
(99) Unknown

31. Longitudinal Component of
Delta V+13-13 Nearest mph

(NOTE: 00 means greater than
-0.5 and less than +0.5 mph)
(±97) ±96.5 mph and above
(99) Unknown

Secondary Highest

32. Lateral Component of Delta V

000.0 Nearest mph

(NOTE: 00 means greater than
-0.5 and less than +0.5 mph)
(±97) ±96.5 mph and above
(99) Unknown

33. Energy Absorption

024,80024786 Nearest 100 foot-lbs

(NOTE: 0000 means less than 50 foot-lbs)
(9997) 999,650 foot-lbs or more
(9999) Unknown

34. Confidence In Reconstruction Program
Results (For Highest Delta V)

- (0) No reconstruction
- (1) Collision fits model — results appear reasonable
- (2) Collision fits model — results appear high
- (3) Collision fits model — results appear low
- (4) Borderline reconstruction — results appear reasonable

1

35. Type of Vehicle Inspection

- (0) No inspection
- (1) Complete inspection
- (2) Partial inspection (specify):

1

36. Is this an AOPS Vehicle?

- (0) No
- (1) Yes

1

IS OLDMISS APPLICABLE FOR THIS VEHICLE? [] YES [✓] NO

IF YES: IS A COMPLETED OLDMISS PROGRAM SUMMARY INCLUDED? [] YES [] NO

37. Police Reported Other Drug Presence 0

- (0) No other drugs present
- (1) Yes (other drug present)
- (7) Not reported
- (8) No driver present
- (9) Unknown

38. Police Reported Observation/Perception Test Type For Driver 0

- (0) No observation/perception test given
- (1) Drug recognition technician (DRT) determination using DEC process
- (2) Behavioral
- (3) Other physical observation/perception determination (specify): _____
- (4) DEC process available, unknown if determination made
- (5) DEC process not available, unknown if other observation/perception test given
- (7) Other observation/perception test (specify): _____
- (8) No driver present

39. Other Drug Specimen Test Type For Driver 0

- (0) No specimen test given
- (1) Blood test
- (2) Urine test
- (3) Other specimen tests (specify): _____
- (7) Unspecified specimen test
- (8) No driver present
- (9) Unknown if specimen test given

DRUG EVALUATION CLASSIFICATION
OTHER DRUGS TEST RESULTS FOR DRIVER

	DEC	
	Observation/ Perception Test Results	Specimen Test Results
Narcotic Drug	40. <u>0</u>	41. <u>0</u>
Depressant Drug	42. <u>0</u>	43. <u>0</u>
Stimulant Drug	44. <u>0</u>	45. <u>0</u>
Hallucinogen Drug	46. <u>0</u>	47. <u>0</u>
Cannabinoid Drug	48. <u>0</u>	49. <u>0</u>
Phencyclidine (PCP)	50. <u>0</u>	51. <u>0</u>
Inhalant Drug	52. <u>0</u>	53. <u>0</u>
Other Drug (Excluding Nicotine, Aspirin, Alcohol, Drugs Administered Post-Crash)	54. <u>0</u>	55. <u>0</u>

Codes For Observation/Perception Test Results

- (0) No DEC observation/perception test given
- (1) Passed DEC observation/perception test
- (2) Failed DEC observation/perception test
- (3) DEC observation/perception test given—
results unknown
- (8) No driver present
- (9) Unknown if DEC observation/perception
test given

Codes for Specimen Test Results

- (0) No specimen test given
- (1) Drug not found in specimen
- (2) Drug found in specimen
- (7) Specimen test given, results unknown or
not obtained
- (8) No driver present
- (9) Unknown if specimen test given

OTHER DATA

56. Driver's Zip Code

9 9 9 9 9

(00000) Driver not present

(00001) Driver not a resident of U.S. or territories
Code actual 5-digit zip code

(99999) Unknown

57. Driver's Race/Ethnic Origin

(0) Driver not present

(1) White (non-Hispanic)

(2) Black (non-Hispanic)

(3) White (Hispanic)

(4) Black (Hispanic)

(5) American Indian, Eskimo or Aleut

(6) Asian or Pacific Islander

(8) Other (specify):

(9) Unknown

58. Vehicle Special Use (This Trip)

(0) No special use

(1) Taxi

(2) Vehicle used as school bus

(3) Vehicle used as other bus

(4) Military

(5) Police

(6) Ambulance

(7) Hearse

(8) Fire truck or car

(9) Unknown

61. Rollover Initiation Object Contacted

0 062. Location on Vehicle Where Initial Principal
Tripping Force Is Applied0

(0) No rollover

(1) Wheels/tires

(2) Side plane

(3) End plane

(4) Undercarriage

(5) Other location on vehicle (specify):

(8) Non-contact rollover forces (specify):

(9) Unknown

63. Direction of Initial Roll

0

(0) No rollover

(1) Roll right - primarily about the longitudinal axis

(2) Roll left - primarily about the longitudinal axis

(5) End-over-end (i.e., primarily about the lateral
axis)

(9) Unknown roll direction

PRECRASH DATA64. Pre-Event Movement (Prior to
Recognition of Critical Event)09

(01) Going straight

(02) Slowing or stopping in traffic lane

(03) Starting in traffic lane

(04) Stopped in traffic lane

(05) Passing or overtaking another vehicle

(06) Disabled or parked in travel lane

(07) Leaving a parking position

(08) Entering a parking position

(09) Turning right

(10) Turning left

(11) Making a U-turn

(12) Backing up (other than for parking position)

(13) Negotiating a curve

(14) Changing lanes

(15) Merging

(16) Successful avoidance maneuver to a previous
critical event

(97) Other (specify):

(98) No driver present

(99) Unknown

ROLLOVER DATAIf GV07 (Body Type) \neq 1-49, leave GV59-GV63 blank.
If GV24 (Rollover) = 0, then GV59-GV63 must equal 0.
If GV24 = 9, then GV59-GV63 must equal 9.

59. Rollover Initiation Type

(0) No rollover

(1) Trip-over

(2) Flip-over

(3) Turn-over

(4) Climb-over

(5) Fall-over

(6) Bounce-over

(7) Collision with another vehicle

(8) Other rollover initiation type specify):

(9) Unknown rollover initiation type

60. Location of Rollover Initiation

(0) No rollover

(1) On roadway

(2) On shoulder—paved

(3) On shoulder—unpaved

(4) On roadside or divided trafficway median

(9) Unknown

CODES FOR ROLLOVER INITIATION OBJECT CONTACTED

(00) No rollover
(01-30) — Vehicle Number

Noncollision

(31) Turn-over — fall-over
(33) Jackknife

Collision With Fixed Object

(41) Tree (≤ 4 inches in diameter)
(42) Tree (> 4 inches in diameter)
(43) Shrubbery or bush
(44) Embankment

(45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post

(50) Pole or post (≤ 4 inches in diameter)
(51) Pole or post (> 4 inches but ≤ 12 inches in diameter)
(52) Pole or post (> 12 inches in diameter)
(53) Pole or post (diameter unknown)

(54) Concrete traffic barrier
(55) Impact attenuator
(56) Other traffic barrier (includes guardrail)
(specify): _____

(57) Fence
(58) Wall
(59) Building
(60) Ditch or culvert
(61) Ground
(62) Fire hydrant
(63) Curb
(64) Bridge
(68) Other fixed object (specify): _____

(69) Unknown fixed object _____

Collision with Nonfixed Object

(71) Motor vehicle not in-transport
(76) Animal
(77) Train
(78) Trailer, disconnected in transport
(88) Other nonfixed object (specify): _____

(89) Unknown nonfixed object _____

(98) Other event (specify): _____

(99) Unknown event or object _____

PRECRAASH DATA (Continued)**65. Critical-Precrash Event**13*This Vehicle Loss of Control Due To:*

- (01) Blow out or flat tire
- (02) Stalled engine
- (03) Disabling vehicle failure (e.g., wheel fell off) (specify): _____
- (04) Non-disabling vehicle problem (e.g., hood flew up) (specify): _____
- (05) Poor road conditions (puddle, pot hole, ice, etc.) (specify): _____
- (06) Traveling too fast for conditions
- (08) Other cause of control loss (specify): _____
- (09) Unknown cause of control loss

This Vehicle Traveling

- (10) Over the lane line on left side of travel lane
- (11) Over the lane line on right side of travel lane
- (12) Off the edge of the road on the left side
- (13) Off the edge of the road on the right side
- (14) End departure
- (15) Turning left at intersection
- (16) Turning right at intersection
- (17) Crossing over (passing through) intersection
- (19) Unknown travel direction

Other Motor Vehicle In Lane

- (50) Stopped
- (51) Traveling in same direction with lower speed (i.e., lower steady speed or decelerating)
- (52) Traveling in same direction with higher speed
- (53) Traveling in opposite direction
- (54) In crossover
- (55) Backing
- (59) Unknown travel direction of other motor vehicle in lane

Other Motor Vehicle Encroaching Into Lane

- (60) From adjacent lane (same direction)—over left lane line
- (61) From adjacent lane (same direction)—over right lane line
- (62) From opposite direction—over left lane line
- (63) From opposite direction—over right lane line
- (64) From parking lane
- (65) From crossing street, turning into same direction
- (66) From crossing street, across path
- (67) From crossing street, turning into opposite direction
- (68) From crossing street, intended path not known
- (70) From driveway, turning into same direction
- (71) From driveway, across path
- (72) From driveway, turning into opposite direction
- (73) From driveway, intended path not known
- (74) From entrance to limited access highway
- (78) Encroachment by other vehicle—details unknown

Pedestrian or Pedalcyclist, or Other Nonmotorist

- (80) Pedestrian in roadway
- (81) Pedestrian approaching roadway
- (82) Pedestrian - unknown location
- (83) Pedalcyclist or other nonmotorist in roadway (specify): _____
- (84) Pedalcyclist or other nonmotorist approaching roadway (specify): _____
- (85) Pedalcyclist or other nonmotorist—unknown location (specify): _____

Object or Animal

- (87) Animal in roadway
- (88) Animal approaching roadway
- (89) Animal—unknown location
- (90) Object in roadway
- (91) Object approaching roadway
- (92) Object—unknown location

(98) Other critical precrash event (specify): _____

(99) Unknown _____

For Corrective Actions Attempted see variable GV14
(Attempted Avoidance Manuever)**66. Precrash Stability After Avoidance Manuever**1

- (0) No avoidance manuever
- (1) Tracking
- (2) Skidding longitudinally—rotation less than 30 degrees
- (3) Skidding laterally—clockwise rotation
- (4) Skidding laterally—counterclockwise rotation
- (7) Other vehicle loss-of-control (specify): _____
- (8) No driver present
- (9) Precrash stability unknown

67. Precrash Directional Consequences of Avoidance Manuever (Corrective Action)5

- (0) No avoidance manuever
- (1) Vehicle stayed in travel lane where avoidance manuever was initiated
- (2) Vehicle stayed on roadway but left travel lane where avoidance manuever was initiated
- (3) Vehicle stayed on roadway, not known if left travel lane where avoidance manuever was initiated
- (4) Vehicle departed roadway
- (5) Avoidance manuever initiated off roadway
- (8) No driver present
- (9) Directional consequences unknown

*** IF THE CDS APPLICABLE VEHICLE WAS NOT INSPECTED (I.E., GV35=0), ***
DO NOT COMPLETE THE EXTERIOR AND INTERIOR VEHICLE FORMS.

*** IF GV07 DOES NOT EQUAL 01-49, DO NOT COMPLETE ***
THE EXTERIOR VEHICLE, INTERIOR VEHICLE,
OCCUPANT ASSESSMENT, AND OCCUPANT INJURY FORMS.

EXTERIOR VEHICLE FORM

**NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM**

1. Primary Sampling Unit Number _____ 2. Case Number - Stratum <u>92-20</u>	3. Vehicle Number <u>01</u>
---	-----------------------------

VEHICLE IDENTIFICATION

VIN 1G1BL537XNW----- Model Year 92
Vehicle Make (specify): CHEVROLET Vehicle Model (specify): CAPRICE

LOCATOR

Locate the end of the damage with respect to the vehicle longitudinal center line or bumper corner for end impacts or an undamaged axle for side impacts.

Specific Impact No.	Location of Direct Damage	Location of Field L
1	ON FRONT BUMPER FACIA, STARTS	FULL BUMPER WIDTH, 164.5 CM
	23.9 CM (R) OF CENTER, EXTENDS	(CORNER TO CORNER)
	31.8 CM TO RIGHT	

CRUSH PROFILE

NOTES: Identify the plane at which the C-measurements are taken (e.g., at bumper, above bumper, at sill, above sill, etc.) and label adjustments (e.g., free space).

Measure and document on the vehicle diagram the location of maximum crush.

Measure C1 to C6 from driver to passenger side in front or rear impacts and rear to front in side impacts.

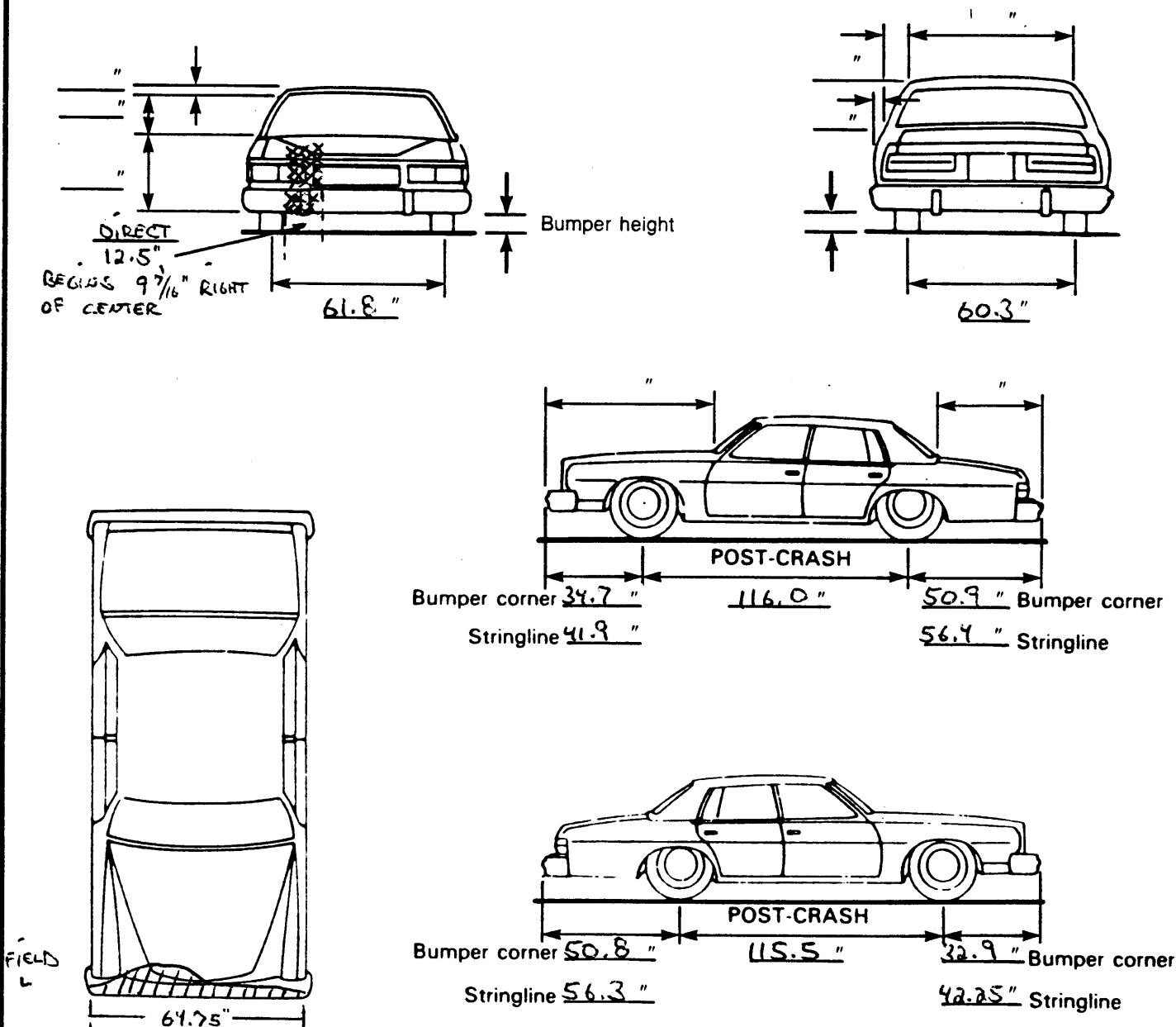
Free space value is defined as the distance between the baseline and the original body contour taken at the individual C locations. This may include the following: bumper lead, bumper taper, side protrusion, side taper, etc. Record the value for each C-measurement and maximum crush.

Use as many lines/columns as necessary to describe each damage profile. **ALL MEASUREMENTS RECORDED IN INCHES**

[illegible]

VEHICLE DAMAGE SKETCH

TIRE—WHEEL DAMAGE a. Rotation physically restricted RF <u>2</u> LF <u>2</u> RR <u>2</u> LR <u>2</u> (1) Yes (2) No (8) NA (9) Unk.		b. Tire deflated RF <u>2</u> LF <u>2</u> RR <u>2</u> LR <u>2</u>		ORIGINAL SPECIFICATIONS Wheelbase <u>115.9"</u> Overall Length <u>214.1"</u> Maximum Width <u>72.0"</u> Curb Weight <u>3907 lbs.</u> Average Track <u>61.05"</u> Front Overhang _____ Rear Overhang _____ Engine Size: cyl./ displ. <u>2 cyl. 5.7 liter</u> Undeformed End Width _____		WHEEL STEER ANGLES (For locked front wheels or displaced rear axles only) RF ± _____° LF ± _____° RR ± _____° LR ± _____° Within ± 5 degrees	
TYPE OF TRANSMISSION <input type="checkbox"/> Manual <input checked="" type="checkbox"/> Automatic				DRIVE WHEELS <input type="checkbox"/> FWD <input checked="" type="checkbox"/> RWD <input type="checkbox"/> 4WD		Approximate Cargo Weight <u>200 lbs</u>	



NOTES: Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views. Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewall, etc.). If pulling trailer, sketch type of trailer and damage received on the back of this page.

Annotate any damage caused by extrication such as component removal by torching, prying, or hydraulic shears.

(57) Fence

(58) Wall

- (59) Building**

- (60) Ditch or culvert**

- (61) Ground**

- (62) Fire hydrant**

- (63) Curb**

- (64) Bridge**

- (68) Other fixed object (specify):**

- (69) Unknown fixed object**

Collision with Nonfixed Object

- (71) Motor vehicle not in-transport**

- (72) Pedestrian**

- (73) Cyclist or cycle**

- (74) Other nonmotorist or conveyance**

- (75) Vehicle occupant**

- (76) Animal**

- (77) Train**

(78) Trailer, disconnected in transport

- (88) Other nonfixed object (specify):

- Table 1** Demographic characteristics of study population

- (89) **Unknown nonfixed object**

- (98) Other event (specify):

- (99) Unknown event or object

COLLISION DEFORMATION CLASSIFICATION**HIGHEST DELTA "V"**

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force	(3) Deformation Location	(4) Longitudinal or Lateral Location	(5) Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
4. <u>01</u>	5. <u>51</u>	6. <u>12</u>	7. <u>F</u>	8. <u>Z</u>	9. <u>E</u>	10. <u>N</u>	11. <u>01</u>

Second Highest Delta "V"

12. <u> </u>	13. <u> </u>	14. <u> </u>	15. <u> </u>	16. <u> </u>	17. <u> </u>	18. <u> </u>	19. <u> </u>
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------

CRUSH PROFILE

The crush profile for the damage described in the CDC(s) above should be documented in the appropriate space below. (ALL MEASUREMENTS ARE IN INCHES.)

HIGHEST DELTA "V"

20. <u>L</u>	21. <u>C₁</u>	<u>C₂</u>	<u>C₃</u>	<u>C₄</u>	<u>C₅</u>	<u>C₆</u>	22. <u>± D</u>
<u>065</u>	<u>01</u>	<u>02</u>	<u>05</u>	<u>08</u>	<u>08</u>	<u>03</u>	<u>⊕</u> <u>- 016</u>

Second Highest Delta "V"

23. <u>L</u>	24. <u>C₁</u>	<u>C₂</u>	<u>C₃</u>	<u>C₄</u>	<u>C₅</u>	<u>C₆</u>	25. <u>± D</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>+</u> <u>-</u>

26. Are CDCs Documented but Not Coded on The Automated File? 0
(0) No
(1) Yes

27. Researcher's Assessment of Vehicle Disposition 1
(0) Not towed due to vehicle damage
(1) Towed due to vehicle damage
(9) Unknown

28. Original Wheelbase 115.9 Code to the nearest tenth of an inch
(9999) Unknown

<p>29. Is This A Multi-Stage Manufactured Vehicle And/Or A Certified Altered Vehicle? <u>0</u></p> <p>(0) No post manufacturer modifications (1) Yes - post manufacturer modifications (specify): _____</p> <p>_____ (Include photograph of CERTIFICATION PLACARD in case report)</p> <p>(9) Unknown if vehicle is modified</p>	<p>31. Origin of Fire <u>0</u></p> <p>(0) No fire (1) Vehicle exterior (front, side, back, top) (2) Exhaust system (3) Fuel tank (and other fuel retention system parts) (4) Engine compartment (5) Cargo/trunk compartment (6) Instrument panel (7) Passenger compartment area (8) Other location (specify): _____</p> <p>(9) Unknown</p>
<p>30. Fire Occurrence <u>0</u></p> <p>(0) No fire</p> <p>Yes, fire occurred (1) Minor (2) Major (9) Unknown</p>	<p>32. Type of Fuel Tank <u>2</u></p> <p>(0) No fuel tank (electrical vehicle) (1) Metallic (2) Non-metallic (9) Unknown</p>

*** STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT TOWED AND WAS NOT AN AOPS ***
(I.E., GV09 = 0 OR 9 AND GV36 = 0), DO NOT COMPLETE THE INTERIOR VEHICLE FORM.



INTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number

2. Case Number - Stratum

3. Vehicle Number

INTEGRITY

4. Passenger Compartment Integrity

(00) No integrity loss

Yes, Integrity Was Lost Through

- (01) Windshield
- (02) Door (side)
- (03) Door/hatch (back door)
- (04) Roof
- (05) Roof glass
- (06) Side window
- (07) Rear window (backlight)
- (08) Roof and roof glass
- (09) Windshield and door (side)
- (10) Windshield and roof
- (11) Side and rear window (side window and backlight)
- (12) Windshield and side window
- (13) Door and side window
- (98) Other combination of above (specify):

(99) Unknown

Door, Tailgate or Hatch Opening

5. LF 1 6. RF 1 7. LR 1 8. RR 1 9. TG/H 0

- (0) No door/gate/hatch
- (1) Door/gate/hatch remained closed and operational
- (2) Door/gate/hatch came open during collision
- (3) Door/gate/hatch jammed shut
- (8) Other (specify):

(9) Unknown

Damage/Failure Associated with Door, Tailgate or Hatch Opening in Collision. If IV05-IV09 \neq 2, Then code 0

10. LF 0 11. RF 0 12. LR 0 13. RR 0 14. TG/H 0

- (0) No door/gate/hatch or door not opened

Door, Tailgate or Hatch Came Open During Collision

- (1) Door operational (no damage)
- (2) Latch/striker failure due to damage
- (3) Hinge failure due to damage
- (4) Door structure failure due to damage
- (5) Door support (i.e., pillar, sill, roof side rail, etc.) failure due to damage
- (6) Latch/striker and hinge failure due to damage
- (8) Other failure (specify):

(9) Unknown

GLAZING

Glazing Damage from Impact Forces

15. WS 0 16. LF 0 17. RF 0 18. LR 0 19. RR 0
20. BL 0 21. Roof 8 22. Other 8

- (0) No glazing damage from impact forces
- (2) Glazing in place and cracked from impact forces
- (3) Glazing in place and holed from impact forces
- (4) Glazing out-of-place (cracked or not) and not holed from impact forces
- (5) Glazing out-of-place and holed from impact forces
- (6) Glazing disintegrated from impact forces
- (7) Glazing removed prior to accident
- (8) No glazing
- (9) Unknown if damaged

Glazing Damage from Occupant Contact

23. WS 0 24. LF 0 25. RF 0 26. LR 0 27. RR 0
28. BL 0 29. Roof 0 30. Other 0

- (0) No occupant contact to glazing or no glazing
- (1) Glazing contacted by occupant but no glazing damage
- (2) Glazing in place and cracked by occupant contact
- (3) Glazing in place and holed by occupant contact
- (4) Glazing out-of-place (cracked or not) by occupant contact and not holed by occupant contact
- (5) Glazing out-of-place by occupant contact and holed by occupant contact
- (6) Glazing disintegrated by occupant contact
- (9) Unknown if contacted by occupant

If No Glazing Damage **And** No Occupant Contact or No Glazing, Then Code IV31 Through IV46 As 0

Type of Window/Windshield Glazing

31. WS 0 32. LF 0 33. RF 0 34. LR 0 35. RR 0
36. BL 0 37. Roof 0 38. Other 0

- (0) No glazing contact and no damage, or no glazing
- (1) AS-1 — Laminated
- (2) AS-2 — Tempered
- (3) AS-3 — Tempered-tinted
- (4) AS-14 — Glass/Plastic
- (8) Other (specify):
- (9) Unknown

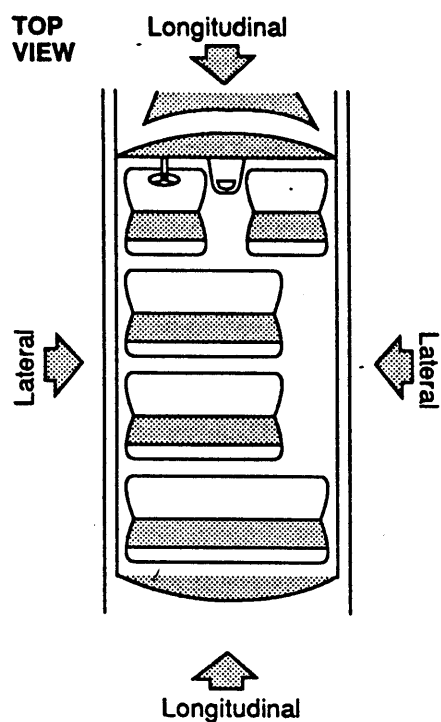
Window Precrash Glazing Status

39. WS 0 40. LF 0 41. RF 0 42. LR 0 43. RR 0
44. BL 0 45. Roof 0 46. Other 0

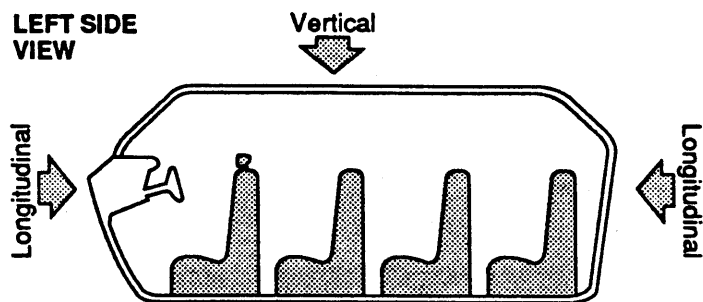
- (0) No glazing contact and no damage, or no glazing
- (1) Fixed
- (2) Closed
- (3) Partially opened
- (4) Fully opened
- (9) Unknown

INTRUSION WORKSHEET

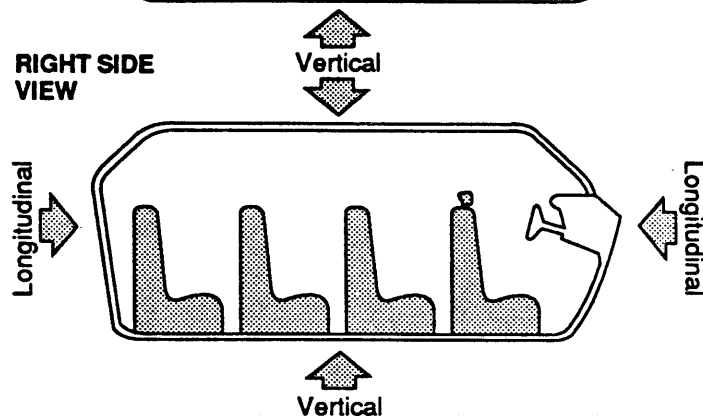
TOP
VIEW



LEFT SIDE
VIEW



RIGHT SIDE
VIEW



Note: Sketch intruded areas

NO INTRUSION

LOCATION OF INTRUSION	INTRUDED COMPONENT	COMPARISON VALUE	INTRUDED VALUE	INTRUSION	DOMINANT CRUSH DIRECTION
		—	=		
		—	=		
		—	=		
		—	=		
		—	=		
		—	=		
		—	=		
		—	=		
		—	=		
		—	=		
		—	=		
		—	=		
		—	=		
		—	=		
		—	=		
		—	=		

Document no more than the 15 most severe intrusions

OCCUPANT AREA INTRUSION

Note: If no intrusions, leave variables IV47-IV86 blank.

INTRUDING COMPONENT

	Location of Intrusion	Intruding Component	Magnitude of Intrusion	Dominant Crush Direction
1st	47. _____	48. _____	49. _____	50. _____
2nd	51. _____	52. _____	53. _____	54. _____
3rd	55. _____	56. _____	57. _____	58. _____
4th	59. _____	60. _____	61. _____	62. _____
5th	63. _____	64. _____	65. _____	66. _____
6th	67. _____	68. _____	69. _____	70. _____
7th	71. _____	72. _____	73. _____	74. _____
8th	75. _____	76. _____	77. _____	78. _____
9th	79. _____	80. _____	81. _____	82. _____
10th	83. _____	84. _____	85. _____	86. _____

Interior Components

- (01) Steering assembly
- (02) Instrument panel left
- (03) Instrument panel center
- (04) Instrument panel right
- (05) Toe pan
- (06) A-pillar
- (07) B-pillar
- (08) C-pillar
- (09) D-pillar
- (10) Door panel (side)
- (12) Roof (or convertible top)
- (13) Roof side rail
- (14) Windshield
- (15) Windshield header
- (16) Window frame
- (17) Floor pan (includes sill)
- (18) Backlight header
- (19) Front seat back
- (20) Second seat back
- (21) Third seat back
- (22) Fourth seat back
- (23) Fifth seat back
- (24) Seat cushion
- (25) Back door/panel (e.g., tailgate)
- (26) Other interior component (specify): _____

NO INTRUSION

- (27) Side panel - forward of the A-pillar
- (28) Side panel - rear of the A-pillar

Exterior Components

- (30) Hood
- (31) Outside surface of this vehicle (specify): _____
- (32) Other exterior object in the environment (specify): _____
- (33) Unknown exterior object
- (97) Catastrophic
- (98) Intrusion of unlisted component(s) (specify): _____
- (99) Unknown

LOCATION OF INTRUSION

Front Seat
 (11) Left
 (12) Middle
 (13) Right

Fourth Seat
 (41) Left
 (42) Middle
 (43) Right

Second Seat
 (21) Left
 (22) Middle
 (23) Right

(97) Catastrophic
 (98) Other enclosed area (specify) _____

(99) Unknown

Third Seat
 (31) Left
 (32) Middle
 (33) Right

MAGNITUDE OF INTRUSION

- (1) ≥ 1 inch but < 3 inches
- (2) ≥ 3 inches but < 6 inches
- (3) ≥ 6 inches but < 12 inches
- (4) ≥ 12 inches but < 18 inches
- (5) ≥ 18 inches but < 24 inches
- (6) ≥ 24 inches
- (7) Catastrophic
- (9) Unknown

DOMINANT CRUSH DIRECTION

- (1) Vertical
- (2) Longitudinal
- (3) Lateral
- (7) Catastrophic
- (9) Unknown

STEERING RIM/SPOKE DEFORMATION

COMPARISON VALUE	—	DAMAGE VALUE	=	DEFORMATION
	—		=	
	—		=	
	—		=	
	—		=	
	—		=	

STEERING COLUMN

87. Steering Column Type

- (1) Fixed column
 (2) Tilt column
 (3) Telescoping column
 (4) Tilt and telescoping column
 (8) Other column type (specify):

(9) Unknown

2

88. Blank

(This variable is left blank so that numbering consistency can be maintained with the 1988-91 CDS.

X X

89. Blank

(This variable is left blank so that numbering consistency can be maintained with the 1988-91 CDS.

X X X

90. Blank

(This variable is left blank so that numbering consistency can be maintained with the 1988-91 CDS.

X X X

91. Blank

(This variable is left blank so that numbering consistency can be maintained with the 1988-91 CDS.

X X X

92. Steering Rim/Spoke Deformation

- 25 Code actual measured deformation to the nearest inch.
 (0) No steering rim deformation
 (1-5) Actual measured value
 (6) 6 inches or more
 (8) Observed deformation cannot be measured
 (9) Unknown

1

93. Location of Steering Rim/Spoke Deformation

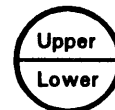
- (00) No steering rim deformation

05*Quarter Sections*

- (01) Section A
 (02) Section B
 (03) Section C
 (04) Section D

*Half Sections*

- (05) Upper half of rim/spoke
 (06) Lower half of rim/spoke
 (07) Left half of rim/spoke
 (08) Right half of rim/spoke



- (09) Complete steering wheel collapse
 (10) Undetermined location
 (99) Unknown

INSTRUMENT PANEL

94. Odometer Reading

0 2 1,000

20,226.4 miles—Code mileage to the nearest 1,000 miles

- (000) No odometer
 (001) Less than 1,500 miles
 (300) 299,500 miles or more
 (999) Unknown

Source: _____

95. Instrument Panel Damage from Occupant Contact?

- (0) No
 (1) Yes
 (9) Unknown

0

96. Knee Bolsters Deformed from Occupant Contact?

- (0) No
 (1) Yes
 (8) Not present
 (9) Unknown

0

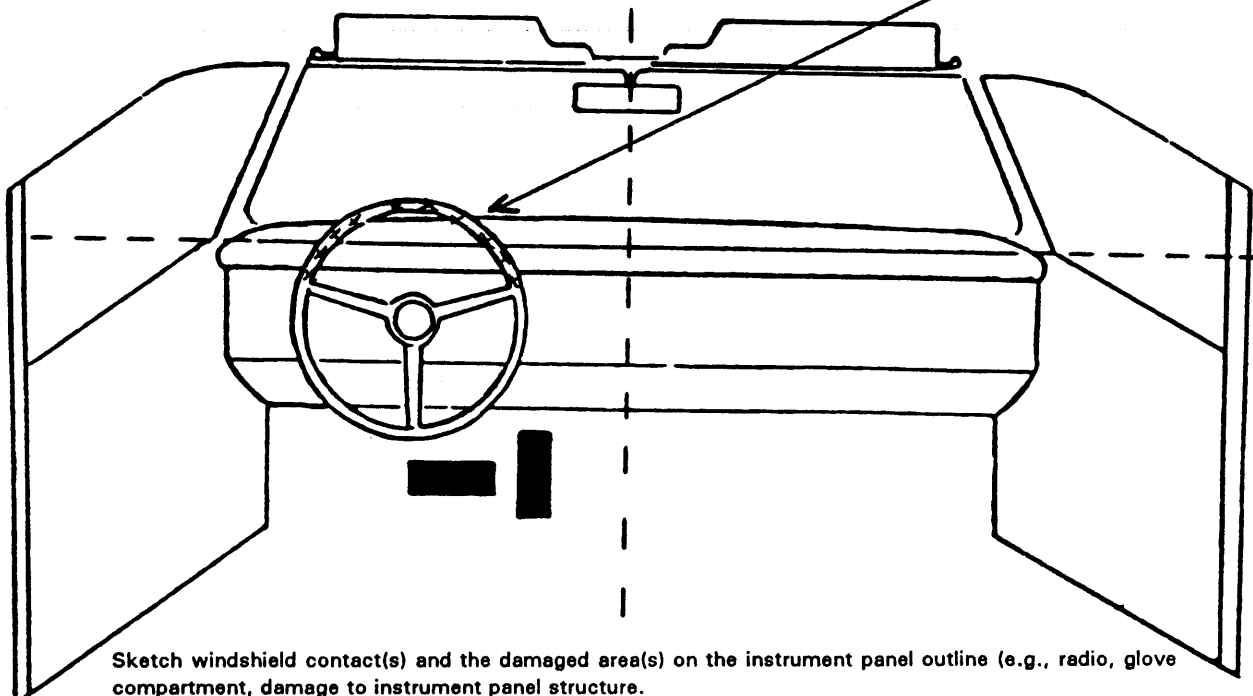
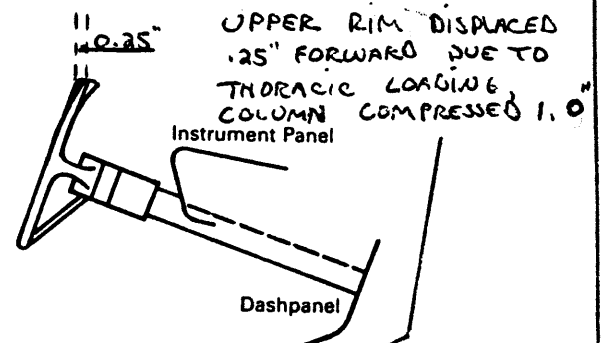
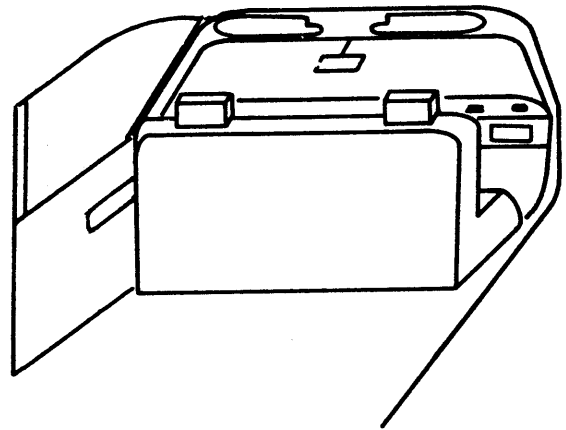
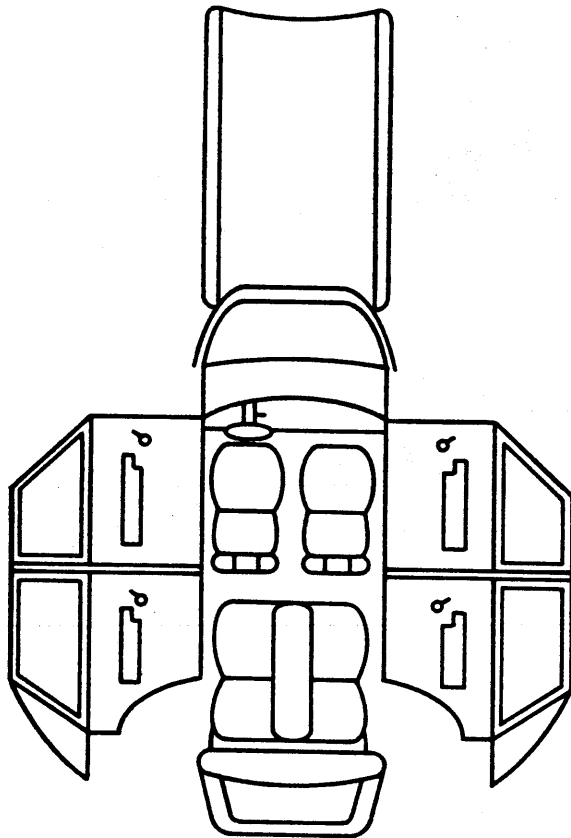
97. Did Glove Compartment Door Open During Collision(s)?

- (0) No
 (1) Yes
 (8) Not present
 (9) Unknown

0

VEHICLE INTERIOR SKETCHES

Note area of ejection/entrapment



Sketch windshield contact(s) and the damaged area(s) on the instrument panel outline (e.g., radio, glove compartment, damage to instrument panel structure).

Cross hatch contact points, draw spider webs or use other annotation as may be appropriate.

Annotate the contacted area with a letter (begin with A) and list on the Points of Occupant Contact page.

POINTS OF OCCUPANT CONTACT

Contact	Interior Component Contacted	Occupant No. If Known	Body Region If Known	Supporting Physical Evidence	Confidence Level of Contact Point
A	06	DRIVER (0)	TORSO	.25" OF RIM DISPLACEMENT, 1" OF	1
B				COLUMN COMPRESSION	
C					
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					
N					

CODES FOR INTERIOR COMPONENTS

FRONT

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A-pillar, instrument panel, or mirror (passenger side only)
- (16) Other front object (specify): _____

LEFT SIDE

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A pillar
- (23) Left B pillar
- (24) Other left pillar (specify): _____
- (25) Left side window glass or frame

- (26) Left side window glass including one or more of the following: frame, window sill, A pillar, B pillar, or roof side rail.
- (27) Other left side object (specify): _____

RIGHT SIDE

- (28) Left side window sill
- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A pillar
- (33) Right B pillar
- (34) Other right pillar (specify): _____
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A pillar, B pillar, or roof side rail.
- (37) Other right side object (specify): _____
- (38) Right side window sill

INTERIOR

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): _____
- (44) Head restraint system
- (45) Air bag
- (46) Other occupants (specify): _____
- (47) Interior loose objects

- (48) Child safety seat (specify): _____

- (49) Other interior object (specify): _____

ROOF

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

FLOOR

- (56) Floor (including toe pan)
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

REAR

- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): _____

CONFIDENCE LEVEL OF CONTACT POINT

- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

AUTOMATIC RESTRAINTS

NOTES: Encode the data for each applicable front seat position. The attribute for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

AIR BAGS

		Left	Right
FIRST	Availability/Function	(0
	Deployment	4	0
	Failure	1	0

Air Bag System Availability/Function

- (0) Not equipped/not available
(1) Air bag

Non-functional

- (2) Air bag disconnected (specify):

(3) Air bag not reinstalled
(9) Unknown

Air Bag System Deployment

- (0) Not equipped/not available
(1) Air bag deployed during accident (as a result of impact)
(2) Air bag deployed inadvertently just prior to accident
(3) Air bag deployed, accident sequence undetermined
(4) Nondeployed
(5) Unknown if deployed
(6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
(9) Unknown

Did Air Bag System Fail?

- (0) Not equipped/not available
(1) No
(2) Yes (specify):

(9) Unknown

AUTOMATIC BELTS

		Left	Right
FIRST	Availability/Function	0	0
	Use	0	0
	Type	0	0
	Proper Use	0	0
	Failure Modes	0	0

Automatic (Passive) Belt System Availability/Function

- (0) Not equipped/not available
(1) 2 point automatic belts
(2) 3 point automatic belts
(3) Automatic belts - type unknown

Non-functional

- (4) Automatic belts destroyed or rendered inoperative
(9) Unknown

Automatic (Passive) Belt System Use

- (0) Not equipped/not available/destroyed or rendered inoperative
(1) Automatic belt in use
(2) Automatic belt not in use (manually disconnected, motorized track inoperative)
(3) Automatic belt use unknown
(9) Unknown

Automatic (Passive) Belt System Type

- (0) Not equipped/not available
(1) Non-motorized system
(2) Motorized system
(9) Unknown

Proper Use of Automatic (Passive) Belt System

- (0) Not equipped/not available/not used
(1) Automatic belt used properly
(2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly

- (3) Automatic shoulder belt worn under arm
(4) Automatic shoulder belt worn behind back
(5) Automatic belt worn around more than one person
(6) Lap portion of automatic belt worn on abdomen
(7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify):

(8) Other improper use of automatic belt system (specify):

(9) Unknown

Automatic (Passive) Belt Failure Modes During Accident

- (0) Not equipped/not available/not in use
(1) No automatic belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify):

(6) Broken retractor
(7) Combination of above (specify):
(8) Other automatic belt failure (specify):

(9) Unknown

MANUAL RESTRAINTS

NOTES: Encode the applicable data for each seat position in the vehicle. The attribute for the variable may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

If a Child safety seat is present, encode the data on the back of this page.

If the vehicle has automatic restraints available, encode the appropriate data on the back of the previous page.

		Left	Center	Right
FIRST	Availability	4	-	4
	Use	00	-	-
	Failure Modes	0	-	-
SECOND	Availability	4	3	4
	Use	-	-	-
	Failure Modes	-	-	-
THIRD	Availability	X		
	Use			
	Failure Modes			
OTHER	Availability	X		
	Use			
	Failure Modes			

Manual (Active) Belt System Availability

- (0) None available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available - type unknown

Integral Belt Partially Destroyed

- (6) Shoulder belt (lap belt destroyed/removed)
- (7) Lap belt (shoulder belt destroyed/removed)

(8) Other belt (specify): _____

(9) Unknown

Manual (Active) Belt System Use

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperable (specify): _____
- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used - type unknown

(08) Other belt used (specify):

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat - type unknown
- (18) Other belt used with child safety seat (specify): _____
- (99) Unknown if belt used

Manual (Active) Belt Failure Modes During Accident

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): _____
- (6) Broken retractor
- (7) Combination of above (specify): _____
- (8) Other manual belt failure (specify): _____
- (9) Unknown

CHILD SAFETY SEAT FIELD ASSESSMENT

When a child safety seat is present enter the occupant's number in the first row and complete the column below the occupant's number using the codes listed below. Complete a column for each child safety seat present.

Occupant Number						
1. Type of Child Safety Seat						
2. Child Safety Seat Orientation						
3. Child Safety Seat Harness Usage						
4. Child Safety Seat Shield Usage						
5. Child Safety Seat Tether Usage						
6. Child Safety Seat Make/Model	Specify Below for Each Child Safety Seat					

1. Type of Child Safety Seat

- (0) No child safety seat
- (1) Infant seat
- (2) Toddler seat
- (3) Convertible seat
- (4) Booster seat
- (7) Other type child safety seat (specify):

- (8) Unknown child safety seat type
- (9) Unknown if child safety seat used

2. Child Safety Seat Orientation

- (00) No child safety seat
- Designed for Rear Facing for This Age/Weight
- (01) Rear facing
- (02) Forward facing
- (08) Other orientation (specify):

- (09) Unknown orientation

Designed for Forward Facing for This Age/Weight

- (11) Rear facing
- (12) Forward facing
- (18) Other orientation (specify):

- (19) Unknown orientation

Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight

- (21) Rear facing
- (22) Forward facing
- (28) Other orientation (specify):

- (29) Unknown orientation

- (99) Unknown if child safety seat used

3. Child Safety Seat Harness Usage

4. Child Safety Seat Shield Usage

- 5. Child Safety Seat Tether Usage
- Note: Options Below Are Used for Variables 3-5.
- (00) No child safety seat

Not Designed with Harness/Shield/Tether

- (01) After market harness/shield/tether added, not used
- (02) After market harness/shield/tether used
- (03) Child safety seat used, but no after market harness/shield/tether added
- (09) Unknown if harness/shield/tether added or used

Designed With Harness/Shield/Tether

- (11) Harness/shield/tether not used
- (12) Harness/shield/tether used
- (19) Unknown if harness/shield/tether used

Unknown If Designed With Harness/Shield/Tether

- (21) Harness/shield/tether not used
- (22) Harness/shield/tether used
- (29) Unknown if harness/shield/tether used

- (99) Unknown if child safety seat used

- 6. Child Safety Seat Make/Model
- (Specify make/model and occupant number)

HEAD RESTRAINTS/SEAT EVALUATION

NOTES: Encode the applicable data for each seat position in the vehicle. The attribute for these variables may be found at the bottom of the page. Head restraint type/damage and seat type/performance should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
F I R S T	Head Restraint Type/Damage	3	-	3
	Seat Type	01	-	01
	Seat Performance	1	-	1
	Seat Orientation	1	-	1
S E C O N D	Head Restraint Type/Damage	0	0	0
	Seat Type	03	03	03
	Seat Performance	1	1	1
	Seat Orientation	1	1	1
T H I R D	Head Restraint Type/Damage	X		
	Seat Type			
	Seat Performance			
	Seat Orientation			
O T H E R	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
	Seat Orientation			

Head Restraint Type/Damage by Occupant at This Occupant Position

- (0) No head restraints
- (1) Integral — no damage
- (2) Integral — damaged during accident
- (3) Adjustable — no damage
- (4) Adjustable — damaged during accident
- (5) Add-on — no damage
- (6) Add-on — damaged during accident
- (8) Other Specify: _____

(9) Unknown _____

Seat Type (this Occupant Position)

- (00) No seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., column supported)
- (09) Other seat type (specify): _____

- (10) Box mounted seat (i.e., van type)
- (99) Unknown

Seat Performance (this Occupant Position)

- (0) No seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks or "seat back" failed specify: _____
- (4) Seat tracks/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify): _____

(7) Combination of above (specify): _____

(8) Other (specify): _____

(9) Unknown _____

Seat Orientation (this Occupant Position)

- (0) No seat
- (1) Forward facing seat
- (2) Rear facing seat
- (3) Side facing seat (inward)
- (4) Side facing seat (outward)
- (8) Other (specify): _____

(9) Unknown _____

DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE (I.E., UNUSUAL OCCUPANT CONTACT PATTERN)

EJECTION/ENTRAPMENT DATA

Complete the following if the researcher has any indication that an occupant was either ejected from or entrapped in the vehicle. Code the appropriate data on the Occupant Assessment Form.

EJECTION No [☒] Yes []

Describe indications of ejection and body parts involved in partial ejection(s):

Occupant Number						
Ejection						
(Note on Vehicle Interior Sketch) Ejection Area						
Ejection Medium						
Medium Status						

Ejection

- (1) Complete ejection
(1) Partial ejection
(3) Ejection, Unknown degree
(9) Unknown

Ejection Area

- (1) Windshield
(2) Left front
(3) Right front
(4) Left rear
(5) Right rear
(6) Rear

(7) Roof

- (8) Other area (e.g., back of pickup, etc.) (specify):

(9) Unknown**Ejection Medium**

- (1) Door/hatch/tailgate
(2) Nonfixed roof structure
(3) Fixed glazing
(4) Nonfixed glazing (specify):

(5) Integral structure

- (8) Other medium (specify):

(9) Unknown**Medium Status (Immediately Prior to Impact)**

- (1) Open
(2) Closed
(3) Integral structure
(9) Unknown

ENTRAPMENT No [☒] Yes []

Describe entrapment mechanism: _____

Component(s): _____

(Note in vehicle interior diagram)

APPENDIX E
NASS OCCUPANT FORMS



OCCUPANT ASSESSMENT FORM

1. ~~Primary Sampling Unit Number~~ _____
2. Case Number ~~Stratum~~ 92-20
3. Vehicle Number 01
4. Occupant Number 01

OCCUPANT'S CHARACTERISTICS

5. Occupant's Age 50
Code actual age at time of accident.
(00) Less than one year old (specify by month):
(97) 97 years and older _____
(99) Unknown _____
6. Occupant's Sex 1
(1) Male
(2) Female
(9) Unknown
7. Occupant's Height 175.3 cm 69
Code actual height to the nearest inch.
(99) Unknown
8. Occupant's Weight 76.5 kg 170
Code actual weight to the nearest pounds.
(999) Unknown
9. Occupant's Role 1
(1) Driver
(2) Passenger
(9) Unknown
10. Occupant's Seat Position 11
Front Seat
(11) Left side
(12) Middle
(13) Right side
(14) Other (specify): _____
(15) On or in the lap of another occupant _____
Second Seat
(21) Left side
(22) Middle
(23) Right side
(24) Other (specify): _____
(25) On or in the lap of another occupant _____
Third Seat
(31) Left side
(32) Middle
(33) Right side
(34) Other (specify): _____
(35) On or in the lap of another occupant _____
Fourth Seat
(41) Left side
(42) Middle
(43) Right side
(44) Other (specify): _____
(45) On or in the lap of another occupant _____
(97) In or on unenclosed area
(98) Other seat (specify): _____
(99) Unknown

11. Occupant Posture 1
(0) Normal posture
(1) Abnormal posture (specify):
LEANING TO RIGHT
(9) Unknown

EJECTION/ENTRAPMENT

12. Ejection 0
(0) No ejection
(1) Complete ejection
(2) Partial ejection
(3) Ejection, unknown degree
(9) Unknown
13. Ejection Area 0
(0) No ejection
(1) Windshield
(2) Left front
(3) Right front
(4) Left rear
(5) Right rear
(6) Rear
(7) Roof
(8) Other area (e.g., back of pickup, etc.)
(specify): _____
(9) Unknown
14. Ejection Medium 0
(0) No ejection
(1) Door/hatch/tailgate
(2) Nonfixed roof structure
(3) Fixed glazing
(4) Nonfixed glazing (specify): _____
(5) Integral structure
(8) Other medium (specify): _____
(9) Unknown
15. Medium Status (Immediately Prior To Impact) 0
(0) No ejection
(1) Open
(2) Closed
(3) Integral structure
(9) Unknown
16. Entrapment 0
(NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.)
(0) Not entrapped
(1) Entrapped
(9) Unknown

RESTRAINT SYSTEM AND SEAT EVALUATION**17. Manual (Active) Belt System Availability** 4

- (0) None available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available—type unknown

Integral Belt Partially Destroyed

- (6) Shoulder belt (lap belt destroyed/removed)
- (7) Lap belt (shoulder belt destroyed/removed)

(8) Other belt (specify): _____

(9) Unknown _____

18. Manual (Active) Belt System Use 0 0

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify): _____

(02) Shoulder belt _____

(03) Lap belt _____

(04) Lap and shoulder belt _____

(05) Belt used—type unknown _____

(08) Other belt used (specify): _____

(12) Shoulder belt used with child safety seat _____

(13) Lap belt used with child safety seat _____

(14) Lap and shoulder belt used with child safety seat _____

(15) Belt used with child safety seat—type unknown _____

(18) Other belt used with child safety seat (specify): _____

(99) Unknown if belt used _____

19. Proper Use of Manual (Active) Belts 0

- (0) None used or not available
- (1) Belt used properly
- (2) Belt used properly with child safety seat

Belt Used Improperly

- (3) Shoulder belt worn under arm
- (4) Shoulder belt worn behind back or seat
- (5) Belt worn around more than one person
- (6) Lap belt worn on abdomen
- (7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): _____

(8) Other improper use of manual belt system (specify): _____

(9) Unknown _____

20. Manual (Active) Belt Failure Modes During Accident 0

- (0) No manual belt used
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): _____

(6) Broken retractor _____

(7) Combination of above (specify): _____

(8) Other manual belt failure (specify): _____

(9) Unknown _____

21. Air Bag System Availability/Function 1

- (0) Not equipped/not available
- (1) Air bag

Non-functional

(2) Air bag disconnected (specify): _____

(3) Air bag not reinstalled _____

(9) Unknown _____

22. Air Bag System Deployment 4

- (0) Not equipped/not available
- (1) Air bag deployed during accident (as a result of impact)
- (2) Air bag deployed inadvertently just prior to accident
- (3) Air bag deployed, accident sequence undetermined
- (4) Nondeployed
- (5) Unknown if deployed
- (6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
- (9) Unknown

23. Did Air Bag System Fail? 1

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): _____

(9) Unknown _____

Note: See Variables 44 through 48 (Page 5) for Information on Automatic Belts

24. Police Reported Restraint Use 0

- (0) None used
- (1) Police did not indicate restraint use
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt used, type not specified
- (6) Child safety seat
- (7) Other or automatic restraint (specify): _____

(8) Restrained, type unknown _____

(9) Police indicated "unknown" _____

25. Head Restraint Type/Damage by Occupant at This Occupant Position 3

- (0) No head restraints
- (1) Integral—no damage
- (2) Integral—damaged during accident
- (3) Adjustable—no damage
- (4) Adjustable—damaged during accident
- (5) Add-on—no damage
- (6) Add-on—damaged during accident
- (8) Other (specify): _____

(9) Unknown _____

26. Seat Type (this Occupant Position) 01
- (00) Occupant not seated or no seat
 - (01) Bucket
 - (02) Bucket with folding back
 - (03) Bench
 - (04) Bench with separate back cushions
 - (05) Bench with folding back(s)
 - (06) Split bench with separate back cushions
 - (07) Split bench with folding back(s)
 - (08) Pedestal (i.e., column supported)
 - (09) Other seat type (specify): _____
 - (10) Box mounted seat (i.e., van type)
 - (99) Unknown

27. Seat Performance (this Occupant Position) 1
- (0) Occupant not seated or no seat
 - (1) No seat performance failure(s)
 - (2) Seat adjusters failed
 - (3) Seat back folding locks or "seat back" failed
 - (4) Seat track/anchors failed
 - (5) Deformed by impact of occupant
 - (6) Deformed by passenger compartment intrusion (specify): _____
 - (7) Combination of above (specify): _____
 - (8) Other (specify): _____
 - (9) Unknown

CHILD SAFETY SEAT

28. Child Safety Seat Make/Model 000
- (000) No child safety seat
- Applicable codes are found in your NASS CDS Data Collection, Coding and Editing
- (950) Built-in child safety seat
 - (997) Other make/model (specify): _____
 - (998) Unknown make/model
 - (999) Unknown if child safety seat used

29. Type of Child Safety Seat 0
- (0) No child safety seat
 - (1) Infant seat
 - (2) Toddler seat
 - (3) Convertible seat
 - (4) Booster seat
 - (7) Other type child safety seat (specify): _____
 - (8) Unknown child safety seat type
 - (9) Unknown if child safety seat used

30. Child Safety Seat Orientation 00
- (00) No child safety seat
- Designed for Rear Facing for This Age/Weight*
- (01) Rear facing
 - (02) Forward facing
 - (08) Other orientation (specify): _____
 - (09) Unknown orientation
- Designed For Forward Facing for This Age/Weight*
- (11) Rear facing
 - (12) Forward facing
 - (18) Other orientation (specify): _____
 - (19) Unknown orientation
- Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight*
- (21) Rear facing
 - (22) Forward facing
 - (28) Other orientation (specify): _____
 - (29) Unknown orientation
 - (99) Unknown if child safety seat used

31. Child Safety Seat Harness Usage 00
32. Child Safety Seat Shield Usage 00
33. Child Safety Seat Tether Usage 00
- Note: Options below applicable to Variables OA31-OA33.
- (00) No child safety seat

- Not Designed With Harness/Shield/Tether*
- (01) After market harness/shield/tether added, not used
 - (02) After market harness/shield/tether used
 - (03) Child safety seat used, but no after market harness/shield/tether added
 - (09) Unknown if harness/shield/tether added or used

- Designed With Harness/Shield/Tether*
- (11) Harness/shield/tether not used
 - (12) Harness/shield/tether used
 - (19) Unknown if harness/shield/tether used

- Unknown If Designed With Harness/Shield/Tether*
- (21) Harness/shield/tether not used
 - (22) Harness/shield/tether used
 - (29) Unknown if harness/shield/tether used
 - (99) Unknown if child safety seat used

INJURY CONSEQUENCES34. Injury Severity (Police Rating) 2

- (0) O - No injury
- (1) C - Possible injury
- (2) B - Nonincapacitating injury
- (3) A - Incapacitating injury
- (4) K - Killed
- (5) U - Injury, severity unknown
- (6) Died prior to accident
- (9) Unknown

35. Treatment - Mortality 4

- (0) No treatment
- (1) Fatal
- (2) Fatal - ruled disease

Nonfatal

- (3) Hospitalization
- (4) Transported and released
- (5) Treatment at scene - nontransported
- (6) Treatment later
- (8) Treatment - other (specify): _____
- (9) Unknown

36. Type Of Medical Facility (for Initial Treatment) 2

- (0) Not treated at a medical facility
- (1) Trauma center
- (2) Hospital
- (3) Medical clinic
- (4) Physician's office
- (5) Treatment later at medical facility
- (8) Other (specify): _____
- (9) Unknown

37. Hospital Stay 00

- (00) Not Hospitalized
- _____ Code the number of days (up through 60) that the occupant stayed in hospital.
- (61) 61 days or more
- (99) Unknown

38. Working Days Lost 00

- _____ Code the number of days (up through 60) that the occupant lost from work due to the accident
- (00) No working days lost
- (61) 61 days or more
- (62) Fatally injured
- (97) Not working prior to accident
- (99) Unknown

went on vacation for 2 weeks following crash (HOUTING)

39. Time to Death 00

- _____ Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 24 hours, 2 days = 48, ... n days = 24 + n up through 30 days = 720)
- (00) Not fatal
- (96) Fatal - ruled disease
- (99) Unknown

40. 1st Medically Reported Cause of Death 0041. 2nd Medically Reported Cause of Death 0042. 3rd Medically Reported Cause of Death 00

- _____ Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death
- (00) Not fatal or no additional causes
- (97) Other result (specify): _____
- (99) Unknown

43. Number of Recorded Injuries for This Occupant 02

- _____ Code the actual number of injuries recorded for this occupant.
- (00) No recorded injuries
- (97) Injured, details unknown
- (99) Unknown if injured

AUTOMATIC BELT SYSTEM**44. Automatic (Passive) Belt System Availability/ Function** 0

- (0) Not equipped/not available
 (1) 2 point automatic belts
 (2) 3 point automatic belts
 (3) Automatic belts - type unknown

Non-functional

- (4) Automatic belts destroyed or rendered inoperative
 (9) Unknown

45. Automatic (Passive) Belt System Use 0

- (0) Not equipped/not available/destroyed or rendered inoperative
 (1) Automatic belt in use
 (2) Automatic belt not in use (manually disconnected, motorized track inoperative) (specify):
 (3) Automatic belt use unknown
 (9) Unknown

46. Automatic (Passive) Belt System Type 0

- (0) Not equipped/not available
 (1) Non-motorized system
 (2) Motorized system
 (9) Unknown

47. Proper Use of Automatic (Passive) Belt System 0

- (0) Not equipped/not available/not used
 (1) Automatic belt used properly
 (2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly

- (3) Automatic shoulder belt worn under arm
 (4) Automatic shoulder belt worn behind back
 (5) Automatic belt worn around more than one person
 (6) Lap portion of automatic belt worn on abdomen
 (7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify):
 (8) Other improper use of automatic belt system (specify):
 (9) Unknown

48. Automatic (Passive) Belt Failure Modes During Accident 0

- (0) Not equipped/not available/not in use
 (1) No automatic belt failure(s)
 (2) Torn webbing (stretched webbing not included)
 (3) Broken buckle or latchplate
 (4) Upper anchorage separated
 (5) Other anchorage separated (specify):
 (6) Broken retractor
 (7) Combination of above (specify):
 (8) Other automatic belt failure (specify):
 (9) Unknown

49. Seat Orientation (this Occupant Position) 1

- (0) Occupant not seated or no seat
 (1) Forward facing seat
 (2) Rear facing seat
 (3) Side facing seat (inward)
 (4) Side facing seat (outward)
 (8) Other (specify):
 (9) Unknown

TRAUMA DATA**50. Glasgow Coma Scale (GCS) Score (at Medical Facility)** 02

- (00) Not injured
 (01) Injured - not treated at medical facility
 (02) No GCS Score at medical facility
 (03-15) Code the actual value of the initial GCS Score recorded at medical facility.
 (97) Injured, details unknown
 (99) Unknown if injured

51. Was the Occupant Given Blood? 1

- (1) No - blood not given
 (2) Yes - blood given (specify units):
 (9) Unknown if blood given

52. Arterial Blood Gases (ABG) - HCO₃ 01

- (00) Not injured
 (01) Injured, ABGs not measured or reported
 (02-50) Code the actual value of the HCO₃
 (96) ABGs reported, HCO₃ unknown
 (97) Injured, details unknown
 (99) Unknown if injured

UPDATE CANDIDATE? NO ☒ YES []OCCUPANT INJURY FORM INCLUDED WITH INITIAL SUBMISSION? NO [] YES ☒

*** STOP HERE ***
 IF THERE ARE NO RECORDED INJURIES
 (I.E., OA43 = 00,97,99)



OCCUPANT INJURY FORM

1. Primary Sampling Unit Number

3. Vehicle Number

2. Case Number --Stratum

4. Occupant Number

INJURY DATA

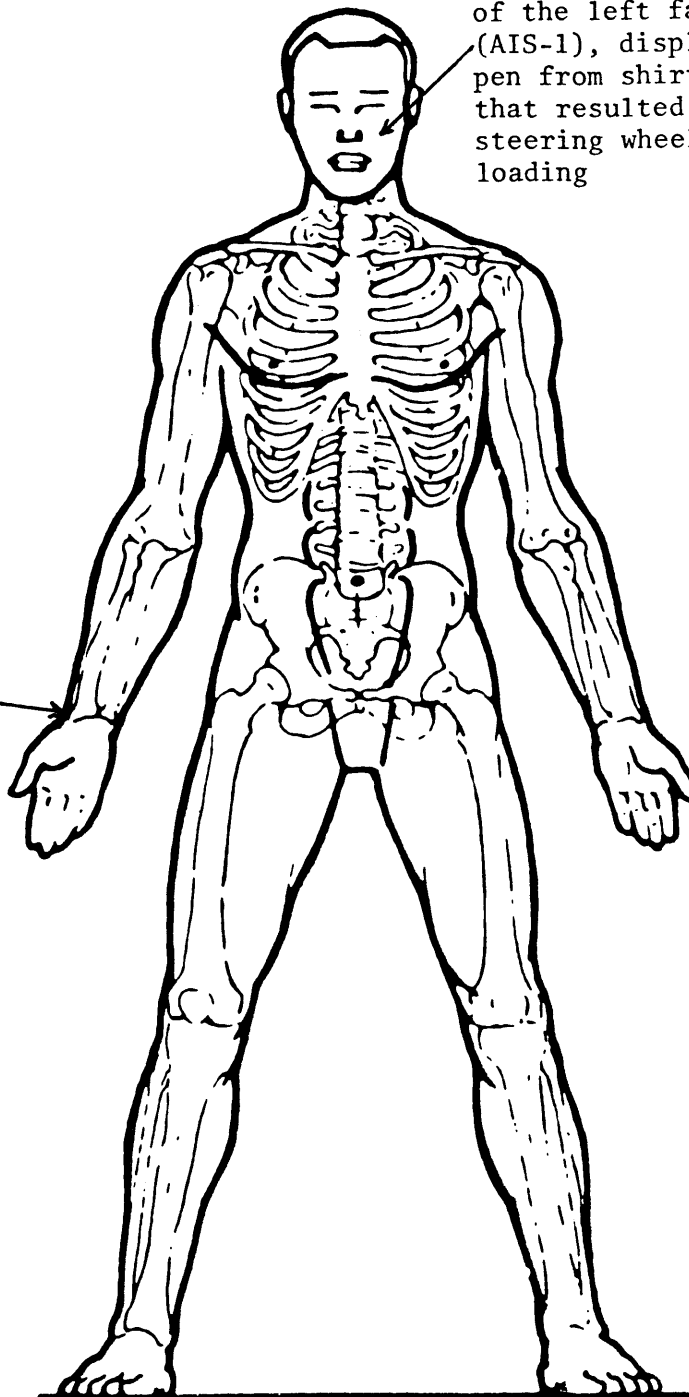
Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

Source of Injury Data	O.I.C.-A.I.S					Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion No.	
	Body Region	Aspect	Lesion	System Organ	A.I.S. Severity					
1st	5. <u>3</u>	6. <u>W</u>	7. <u>B</u>	8. <u>A</u>	9. <u>I</u>	10. <u>1</u>	11. <u>49</u>	12. <u>1</u>	13. <u>1</u>	14. <u>00</u>
2nd	15. <u>3</u>	16. <u>F</u>	17. <u>L</u>	18. <u>L</u>	19. <u>I</u>	20. <u>1</u>	21. <u>06</u>	22. <u>1</u>	23. <u>2</u>	24. <u>00</u>
3rd	25. <u> </u>	26. <u> </u>	27. <u> </u>	28. <u> </u>	29. <u> </u>	30. <u> </u>	31. <u> </u>	32. <u> </u>	33. <u> </u>	34. <u> </u>
4th	35. <u> </u>	36. <u> </u>	37. <u> </u>	38. <u> </u>	39. <u> </u>	40. <u> </u>	41. <u> </u>	42. <u> </u>	43. <u> </u>	44. <u> </u>
5th	45. <u> </u>	46. <u> </u>	47. <u> </u>	48. <u> </u>	49. <u> </u>	50. <u> </u>	51. <u> </u>	52. <u> </u>	53. <u> </u>	54. <u> </u>
6th	55. <u> </u>	56. <u> </u>	57. <u> </u>	58. <u> </u>	59. <u> </u>	60. <u> </u>	61. <u> </u>	62. <u> </u>	63. <u> </u>	64. <u> </u>
7th	65. <u> </u>	66. <u> </u>	67. <u> </u>	68. <u> </u>	69. <u> </u>	70. <u> </u>	71. <u> </u>	72. <u> </u>	73. <u> </u>	74. <u> </u>
8th	75. <u> </u>	76. <u> </u>	77. <u> </u>	78. <u> </u>	79. <u> </u>	80. <u> </u>	81. <u> </u>	82. <u> </u>	83. <u> </u>	84. <u> </u>
9th	85. <u> </u>	86. <u> </u>	87. <u> </u>	88. <u> </u>	89. <u> </u>	90. <u> </u>	91. <u> </u>	92. <u> </u>	93. <u> </u>	94. <u> </u>
10th	95. <u> </u>	96. <u> </u>	97. <u> </u>	98. <u> </u>	99. <u> </u>	100. <u> </u>	101. <u> </u>	102. <u> </u>	103. <u> </u>	104. <u> </u>

Superficial laceration
of the left face
(AIS-1), displaced
pen from shirt pocket
that resulted from
steering wheel
loading

AGE 50.....
SEX Male....
WT. 170 lbs..
HT. 69".....

Small abrasion to the
dorsal aspect of the
right wrist (AIS-1),
center mounted
radio equipment



SOURCE OF INJURY DATA**OFFICIAL**

- (1) Autopsy records with or without hospital medical records
- (2) Hospital medical records other than emergency room [e.g., discharge summary]
- (3) Emergency room records only (including associated X-rays or other lab reports)
- (4) Private physician, walk-in or emergency clinic

UNOFFICIAL

- (5) Lay coroner report
- (6) E.M.S. personnel
- (7) Interviewee
- (8) Other source (specify): _____
- (9) Police

INJURY SOURCE**FRONT**

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A-pillar, instrument panel, or mirror (passenger side only)
- (16) Other front object (specify): _____

LEFT SIDE

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A pillar
- (23) Left B pillar
- (24) Other left pillar (specify): _____
- (25) Left side window glass or frame

- (26) Left side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail.
- (27) Other left side object (specify): _____

- (28) Left side window sill

RIGHT SIDE

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A pillar
- (33) Right B pillar
- (34) Other right pillar (specify): _____
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A pillar, B pillar, or roof side rail.
- (37) Other right side object (specify): _____

- (38) Right side window sill

INTERIOR

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): _____
- (44) Head restraint system
- (45) Air bag
- (46) Other occupants (specify): _____
- (47) Interior loose objects
- (48) Child safety seat (specify): _____
- (49) Other interior object (specify): _____

ROOF

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

FLOOR

- (56) Floor (including toe pan)
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

REAR

- (60) Backlight (rear window)

- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): _____

EXTERIOR of OCCUPANT'S VEHICLE

- (65) Hood
- (66) Outside hardware (e.g., outside mirror, antenna)
- (67) Other exterior surface or tires (specify): _____
- (68) Unknown exterior objects

EXTERIOR OF OTHER MOTOR VEHICLE

- (70) Front bumper
- (71) Hood edge
- (72) Other front of vehicle (specify): _____
- (73) Hood
- (74) Hood ornament
- (75) Windshield, roof rail, A-pillar
- (76) Side surface
- (77) Side mirrors
- (78) Other side protrusions (specify): _____
- (79) Rear surface
- (80) Undercarriage
- (81) Tires and wheels
- (82) Other exterior of other motor vehicle (specify): _____
- (83) Unknown exterior of other motor vehicle

OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT

- (84) Ground
- (85) Other vehicle or object (specify): _____
- (86) Unknown vehicle or object

NONCONTACT INJURY

- (90) Fire in vehicle
- (91) Flying glass
- (92) Other noncontact injury source (specify): _____
- (93) Air bag exhaust gases
- (97) Injured, unknown source

INJURY SOURCE CONFIDENCE LEVEL

- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

DIRECT/INDIRECT INJURY

- (1) Direct contact injury
- (2) Indirect contact injury
- (3) Noncontact injury
- (7) Injured, unknown source

OCCUPANT INJURY CLASSIFICATION**O.I.C. Body Region**

- (M) Abdomen
- (Q) Ankle-foot
- (A) Arm (upper)
- (B) Back-thoracolumbar spine
- (C) Chest
- (E) Elbow
- (F) Face
- (R) Forearm
- (H) Head-skull
- (U) Injured, unknown region
- (K) Knee
- (L) Leg (lower)
- (Y) Lower limbs(s) (whole or unknown part)
- (N) Neck-cervical spine
- (P) Pelvic-hip
- (S) Shoulder
- (T) Thigh
- (X) Upper limb(s) (whole or unknown part)
- (O) Whole body
- (W) Wrist-hand

Aspect of Injury

- (A) Anterior-front
- (B) Bilateral (rib fracture only)
- (C) Central
- (I) Inferior-lower
- (U) Injured, unknown aspect
- (L) Left
- (P) Posterior-back
- (R) Right
- (S) Superior-upper
- (W) Whole region

Lesion

- (A) Abrasion
- (M) Amputation
- (V) Avulsion
- (B) Burn
- (K) Concussion
- (C) Contusion
- (N) Crush
- (G) Detachment, separation
- (D) Dislocation

- (F) Fracture
- (Z) Fracture and dislocation
- (U) Injured, unknown lesion
- (L) Laceration
- (O) Other
- (P) Perforation, puncture
- (R) Rupture
- (S) Sprain
- (T) Strain
- (E) Total severance, transection

System/Organ


- (W) All systems in region
- (A) Arteries-veins
- (B) Brain
- (D) Digestive
- (E) Ears
- (O) Eye
- (H) Heart
- (U) Injured, unknown system
- (I) Integumentary
- (J) Joints
- (K) Kidneys

- (L) Liver
- (M) Muscles
- (N) Nervous system
- (P) Pulmonary-lungs
- (R) Respiratory
- (S) Skeletal
- (C) Spinal cord
- (Q) Spleen
- (T) Thyroid, other endocrine gland
- (V) Vertebrae

Abbreviated Injury Scale

- (1) Minor injury
- (2) Moderate injury
- (3) Serious injury
- (4) Severe injury
- (5) Critical injury
- (6) Maximum (untreatable)
- (7) Injured, unknown severity

APPENDIX F

 POLICE FLEET CRASH DATA

MAYOR
[REDACTED]
MAYOR PRO TEM
[REDACTED]
COUNCILMEMBERS
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

BEST AVAILABLE COPY

[REDACTED]
CITY MANAGER
[REDACTED]
CITY ATTORNEY
[REDACTED]
CLERK OF THE COUNCIL
[REDACTED]

[REDACTED] 1992

Calspan Corporation
[REDACTED]

P.O. [REDACTED]
[REDACTED] New York [REDACTED]

Subject: SIR System Report - Caprice Air Bag

Dear Mr. [REDACTED]

Attached are copies of the letter you requested, from [REDACTED] of the [REDACTED] Branch of the Chevrolet Motor Division of General Motors Corporation in [REDACTED], CA [REDACTED], regarding the engineering report on the SIR System.

Please feel free to call if further questions or information is needed.

Yours truly,
[REDACTED]
[REDACTED]
[REDACTED]

/attachments



[REDACTED] 1992

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] CA [REDACTED]
Dear Mr. [REDACTED]

Thank you for your contact concerning the Supplemental Restraint System (SIR) in a 1991 Chevrolet Caprice (Vehicle Identification Number 1G1BL5378MR[REDACTED]). The integrity of SIR systems and the confidence in these systems on the part of vehicle operators is extremely important to General Motors. We are very concerned about any reports questioning the manner in which the SIR system functions, and appreciate the opportunity to investigate the incident you reported. All materials related to the incident have been analyzed by a special Engineering Analysis group with specific responsibility for SIR systems.

The engineering report concluded that the SIR system was functioning properly before, during, and after the incident. Additionally, there have not been any malfunctions during the vehicle's entire history of 2999 ignition cycles recorded by the Diagnostic and Energy Reserve Module (DERM). This includes the ignition cycle during which the accident occurred.

A review of the facts and information indicate the SIR should not have deployed during impact with the pole. Photographs showing damage sustained by the vehicle indicate that the energy level involved in this impact was not sufficient magnitude to deploy the SIR.

In addition to providing the above information from an engineering analysis group we would like to provide you the opportunity to review a recent telecast that was developed to familiarize GM service personnel (and dealership staff) with the principles of operation of GM air bag systems. A video tape copy of this telecast will be available in the next few weeks. I'll contact you as soon as the material is available to schedule a meeting at which you and interested members of the [REDACTED] Police Department can view the information if you so desire.

Thank you for the opportunity to respond to your questions. If you have any other issues please feel free to contact me at [REDACTED]

Very truly yours,

[REDACTED]
[REDACTED]
[REDACTED]
Fleet Service Manager

[REDACTED]
cc: [REDACTED]

3.3

QUEST REGIONAL BROADCAST
 QUEST FOR REGIONAL BROADCAST

* TO ALL POLICE, SHERIFF, AND STATE LAW ENFORCEMENT
 AGENCIES NATIONWIDE

SUBJECT: 1991 CHEVROLET CAPRICE- SAFETY INFO

[REDACTED] POLICE DEPARTMENT IS EXPERIENCING PROBLEMS WITH
 THE AIR BAG NOT ACTIVATING IN THIS VEHICLE. APPROXIMATELY
 4 WEEKS AGO, ONE OF OUR PATROL UNITS WAS IN A PURSUIT, HIT
 A METAL CONCRETE REINFORCED POLE, AND THE AIR BAG DID NOT
 ACTIVATE. THERE WAS MAJOR DAMAGE TO THE VEHICLE AND THE
 OFFICER RECEIVED BRUISES AND BUMPS.

[REDACTED] IN ANOTHER PURSUIT, A CITIZEN COLLIDED WITH A
 PATROL UNIT. THERE WAS LEFT FRONT FENDER DAMAGE, THE GRILLE
 AREA OF THE HOOD WAS SMASHED, THE FENDER BUCKLED, AND THERE
 WAS MODERATE DAMAGE TO THE VEHICLE, AND AGAIN THE AIR BAG
 DID NOT ACTIVATE.

CHEVROLET/GM IS LOOKING INTO THE PROBLEMS.

IF ANY AGENCY WITH SIMILAR PROBLEMS, PLEASE CONTACT [REDACTED]
 THE [REDACTED] POLICE DEPARTMENT VIA TELETYPE OR CALL
 [REDACTED] ANY HELP IS APPRECIATED.

P/[REDACTED] PD
 RCI

NLET NBR 01600 AT [REDACTED] 092
 T [REDACTED] 0307 NBRD 0103 AT [REDACTED] MRI [REDACTED]

